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## Perspectives on the current state of Nigeria's emergency care system among participants of an Emergency Medicine symposium: a qualitative appraisal

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Perspectives on the current state of Nigeria's emergency care system among participants of an Emergency Medicine symposium: a qualitative appraisal

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Key Words: Qualitative research; Health systems; Health systems strengthening; LMIC

**Abstract**

**Introduction:** Emergency care systems provide timely and relevant care to the acutely ill and injured. Efforts have been made to characterize the Nigerian emergency care system, but little input has been elicited directly from the community. We set out to obtain the public's perception of the emergency care system at an Emergency Medicine Symposium in Lagos, Nigeria, March 2020.

**Methods:** Community members, including healthcare professionals and laypersons, participated in focus group discussions to elucidate perceptions of the emergency care system in Nigeria. Participants were randomly divided into small groups that were led by two trained facilitators each. These facilitators asked open-ended, semi-structured questions to lead discussions in the English language. Participant responses were audio-recorded and transcribed verbatim into transcripts. Two independent investigators employed conventional content analysis to code the transcripts until thematic saturation was achieved.

**Results:** Three descriptive themes emerged characterizing the current state of Nigeria's emergency care system as it relates to prehospital

care delivery, hospital care delivery and health system stewardship: rudimentary, vulnerable, and disconnected. At the prehospital level, concepts revolved around emergency recognition and response, ambulance and frontline providers, and cultural norms. At the hospital level, concepts centered around the health workforce, clinical competency, hospital capacity and the burden of uncompensated care. At the health system level, concepts concentrated on healthcare access and healthcare financing. Opportunities for emergency care system improvement at each component level were identified and explored.

**Conclusions:** Significant shortcomings in prehospital and hospital care delivery as well as health system stewardship were identified. Healthcare professionals, policymakers, and community leaders should carefully consider the public's perceptions when designing and implementing interventions to strengthen Nigeria's emergency care system. If successful, these community-driven interventions may serve as a model to improve emergency care systems throughout Africa.

**Word Count:** 289

**Key Words:** Qualitative research; Health systems; Health systems strengthening; LMIC

#### **Strengths and Limitations of this study**

- This qualitative study elicits feedback from the Nigerian community regarding their emergency care needs in an attempt to improve the Nigerian emergency care system.
- This study utilized a collaborative approach with local Nigerian research partners.

- The strength of the conclusions are weakened by the small sample size of participants involved making it difficult to generalize their opinions to the general population.

**INTRODUCTION**

On the 28<sup>th</sup> of May 2019, the Seventy-second World Health Assembly, unanimously passed a resolution recognizing the essential role emergency care systems play in preventing death and disability from acute illness and injury[1]. Nigeria's health system has struggled to meet the needs of an ever growing population despite economic advances in recent years[2, 3]. When compared globally, Nigeria is ranked 142nd out of 195 countries when evaluating its performance on a comparative healthcare access and quality index[4]. Nigeria's ability to deliver accessible quality medical care is limited by its current healthcare infrastructure. Health facilities are poorly resourced and understaffed, especially in rural areas[5]. Despite having the largest economy in Africa, Nigeria has 0.5 hospital beds per 1000 people, which falls below the average of 1.0 beds per 1000 people in other Sub-Saharan African countries[5, 6]. Moreover, there are only 47 tertiary hospitals in the country with a population of over 200 million people[7].

It is estimated that over half of all deaths in low-and middle-income countries (LMICs) can be averted by effective emergency care delivery[8]. In Nigeria, that would translate to approximately 100,000 lives saved every year, or 300 lives every day. Like in most LMICs,

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3 Nigerian emergency departments are run by providers with little to no  
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5 dedicated specialty training in emergency care as there are no  
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7 recognized post graduate training programs in Emergency Medicine[9,  
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9 10]. It is estimated that, of the 1.6 million deaths recorded  
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11 annually in Nigeria, 10-15% occur in emergency departments[11]. In  
12  
13 recent years, increased efforts have been made to better characterize  
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15 the current state of emergency care delivery in Nigeria and offer  
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17 possible solutions[12-14]. However, very little input has been  
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19 elicited directly from the community to gauge their understanding and  
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21 experiences with Nigeria's emergency care system.  
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26 We sought to identify the public's perceptions of Nigeria's emergency  
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28 care system at an emergency medicine symposium in Lagos, Nigeria, on  
29  
30 the 28<sup>th</sup> of March, 2020. Members of the local community - both health  
31  
32 professionals and laypeople - gathered to share perspectives on  
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34 strengthening the Nigerian emergency care system and ultimately saving  
35  
36 lives. We facilitated discussions with symposium participants to  
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38 better understand their impression of Nigeria's emergency care system  
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40 - including the current state of healthcare delivery, challenges to  
41  
42 seeking and providing timely emergency care, and opportunities for  
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44 improving upon the emergency care system so that it meets the needs of  
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46 the populace.  
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## 51 **METHODS**

### 52 **Study Design**

Focus groups are recognized as ideal avenues for investigating complex and unique concepts, particularly when they are dependent on obscure factors or determinants[15, 16]. We invited participants in an emergency medicine symposium - an ideal setting to gather members of the public with insight and interest - to participate in focus group discussions centered on perceptions of the emergency care system in Nigeria.

**Patient and Public Involvement**

There was no patient involvement in the design, conduct, reporting, or dissemination plans of our research.

**Recruitment of Participants**

Participants were made aware of our intention to conduct focus group discussions at the commencement of the symposium, hosted by WeBelieve Health, a non-profit organization, in Lagos, Nigeria. Participation was voluntary and without restriction or incentive. A total of 66 symposium attendees, 43% of the total 152 symposium registrants, agreed to participate. 52 were healthcare professionals, which included medical officers, surgeons, nurses, and medics, and 14 were non-healthcare professionals, or laypersons, which included reporters, business professionals and policy makers[Table 1].

Table 1 Demographic data of discussion group participants, Lagos, Nigeria

		Number of Participan	Percentage

		ts (n=66)	
Sex	Male	33	50.0%
	Female	33	50.0%
Occupation	Physician	29	43.9%
	Nurse	3	4.5%
	Medic	19	28.8%
	Medical Student	1	1.5%
	Community Member	14	21.2%

### Data Collection and Management

We collaborated with the Department of Community Health and Primary Care at the University of Lagos College of Medicine to coordinate seven focus group discussions. The participants were divided by convenience sampling into seven groups of 8 to 11 people. Each group was led by two facilitators; one facilitator served as the moderator and the other facilitator served as the assistant. Moderators were experienced in qualitative data analysis and conducting focus groups. Assistants were community volunteers and were provided same day training on the principles and processes of qualitative data collection and management. Each facilitator was fluent in English, pidgin English and local languages. The focus groups were conducted in English language.

Small group facilitators obtained verbal consent from each participant at the beginning of each focus group discussion. Facilitators utilized open-ended, semi-structured questions pre-developed and included in an interview guide adopted from focus group scripts utilized in a Zambian pilot study[17] [Supplement 1]. The script was designed to capture community member opinions specifically about emergency care making it an excellent template to use, with adaptation, in our study. The focus groups were audio recorded with a digital voice recorder and transcribed verbatim in English by the facilitator assistant into Microsoft Word 13, version 15.0. NVivo version 12, a computer-assisted qualitative data analysis software, was utilized to facilitate data management and organization.

**Data Analysis**

Utilizing a team-based approach with two independent investigators, we employed conventional content analysis to apply codes that emerged directly from the narrative data. Each investigator coded independently by carefully exploring each transcript to ensure recognition of the most salient codes and patterns. The investigators then compared their applied codes and categorized the emerging codes into overarching themes using in-vivo descriptors embedded directly in the text. Shared decision making continued until group consensus was achieved. The independent investigators also conducted quality assessments of the results with the CASP checklist[Supplement 2].

**Ethics and Funding**

The Institutional Review Board (IRB) at the Lagos University Teaching Hospital and at Beth Israel Deaconess Medical Center provided ethical approval for this study. Funding for this study was provided by an Eleanor Miles Shores' Foundation Grant at Beth Israel Deaconess Medical Center. The funders did not participate in the collection, analysis, interpretation or presentation of the data.

## RESULTS

The interview guide was developed to explore the participants' experiences and interactions with the emergency care system at the prehospital setting, the hospital setting and at the health system level. Participants further characterized their perceived challenges at each of these sectors as it relates to pre-hospital care delivery, hospital care delivery, and health system stewardship. Challenges were classified by descriptive themes according to the most commonly used terms by the focus group participants. The descriptive themes were rudimentary, vulnerable and disconnected[Table 2].

Table 2 Thematic Categories and Supportive Quotes

Overarching Theme	Subtheme Categories	Representative Quotes
	Emergency Recognition and Response	<p>"Patient's die because, [even if] we can provide help to the person, we don't have the means to help."</p> <p>"Everybody should know how to do CPR so when somebody drops dead, they don't start pouring water and start screaming around, which is what we do, They start running around and forcing water down the person's</p>

Rudimentary		mouth."
	Ambulance and Frontline Providers	<p>"There is no guarantee that first responders will get there on time, or that the person is going to get the desired help, or that they would get to the hospital on time. There is no guarantee that there won't be traffic. Like all the odds are stacked against you., so you rather not bother."</p> <p>"The police will stop the ambulance asking them where they are going, even with a patient on board."</p>
	Cultural Considerations	<p>"For instance, you want to do CPR for someone and [it] requires you to touch the person. You will not have the time to start explaining what you want to do; and if you go ahead, you may not even leave there alive!"</p> <p>"Helping people in emergency situations, one can be tagged as a culprit. If I see someone on the road who requires emergency care and I stop to help, maybe put the person in my car. If anything happens to the person and I'm stopped by FRSC [Federal Road Safety Corps], they always tend to assume the Good Samaritan is the culprit."</p>
	Healthcare Workforce	<p>"In the hospital, you could see somebody passing coca cola urine right there sitting on the floor; you see another person convulsing still on the floor; then you look and there is just only one nurse trying to take care of a gamot of patients."</p> <p>"There's a kind of brain drain. Everybody is no longer motivated as before. People are like - what am I doing here? After all my mates or colleagues [abroad], they are out there getting well paid and seeing results and</p>

<b>Vulnerability</b>		<p>they can work happily. They are in a better environment. But you are here just stressed out. You can't even help the patient as you have loved to. There are so many, you know; they just get demotivated."</p>
	Clinical Competency	<p>"I was not well equipped in terms of training so I had to train myself in ACLS, BLS, and ATLS and that gave me more confidence."</p> <p>"A patient with GCS 3, some of our colleagues actually transfer these patients with no airway or IV access and this reduces the chances of survival for the patient."</p>
	Hospital Capacity	<p>"You can't do investigations in emergencies. You need the results of your investigations in minutes. When you send an investigation the person comes back to say it will be ready the following day. Or even the next week."</p> <p>"It was my first clinical exposure ever...The doctor on call had a patient but there was no bed space; there were no gloves. He told us to go anywhere to get gloves. It was a head injury and the man's head was practically held together by bandages getting soaked and there were no gloves in the whole A&amp;E. We practically watched the patient die because there were no gloves anywhere."</p> <p>"I picked up a patient in an ambulance. It was a case of head injury. I took him to [hospital 1]; there was no bed space. He was bleeding from all orifices. It was terrible and all efforts to arrest the bleeding proved abortive. They referred to [hospital 2]. I got to [hospital 2]; no bed space. So they said we should</p>

		<p>go to spill over. Patient had nothing on him - no phone, no relatives. In spillover, you must pay money, so I called my boss. He said to take him to the [hospital 3]. I got there and they say they cannot be managed; I was referred to [hospital 4]. On our way to [hospital 4], the patient expired."</p>
	Burden of Uncompensated Care	<p>"Most times money is a hindrance because most emergency [departments] wouldn't or may not attend to you if you don't have money on you, without a proof that you are going to pay."</p> <p>"Sometimes we need adrenaline. We need to resuscitate the patient. We don't have it in our crash cart. Then we need the patient to get it. Before the patient will get it, it's more than 30 minutes and the patient is already dead."</p>
Disconnected	Healthcare Access	<p>"It shouldn't be on us to be doing this, it should be on the government; the government should do this. So whatever we will talk about today, it should be focused on getting the government to work on this, so that all the burdens stacked against us will be taken away."</p> <p>"In Nigeria, we don't have a problem with drafting down laws, our problem is in enforcing those laws. And unfortunately, those that have been charged with doing that are our problem. So, someone has to police the police."</p> <p>"Most of these patients are already there [at the church or mosque] where they are praying for them. And</p>

		when they are almost dying, they come to the hospital."
	Healthcare Financing	<p>"To be very honest, if you bring money, you can easily be admitted in a private ward and you get everything you need."</p> <p>"I personally believe that every single Nigerian is just one major health crisis from being in abject poverty, which means that we are all, like, at risk technically."</p>

### Pre-Hospital Care Delivery

*Rudimentary* was a repeated descriptor for the undeveloped, or as some participants stated "nonexistent," infrastructure currently in place to deliver care to patients at the scene of injury or illness. It also represented the community understanding of basic life support interventions such as performing cardiopulmonary resuscitation (CPR). An overall impression was that effective and prioritized interventions in prehospital care delivery would result in the biggest impact to Nigeria's emergency care system.

### Emergency Recognition and Response

The first step in emergency response is recognizing the emergency. Participants generally defined an emergency as any condition that, if

not provided urgent attention, will result in loss of life or long-lasting disability. 90% of the participants verbalized that they had personally witnessed an emergency, with 80% having witnessed an emergency on at least three separate occasions[Table 3]. Although many stated that they are willing to help a victim in need of emergency care, they lack training in providing basic life support, and the first aid equipment needed to facilitate care delivery is not readily available. One participant mentioned a time when he witnessed a woman being hit by an okada (*okada is a common motorcycle taxi in Nigeria*). He didn't offer help because he did not have a first aid kit, and therefore he did not feel empowered to provide care without medical supplies. For this reason, the majority of patients receive initial care by family members or bystanders who lack formal training resulting in many simply "fanning [you] with an ipele (*ipele is a head scarf*)."

Table 3 Types of emergencies most commonly referenced

Trauma	Falls
	Road Traffic Accidents
	Mass Casualty Incidents
Medical	Asthma
	Malaria
	Stroke
	Perforated Peptic Ulcer

Ambulances and Frontline Providers

There were disagreements related to the presence of a universal access number that individuals can call to report and request emergency help.

Multiple numbers were identified as the universal emergency access number in Nigeria: 199, 112 and 122. 122 was the most recognized number although many discussed that it was unreliable. If successful in reaching an operator to dispatch emergency personnel, the next challenge is having the ambulance reach the patient in a timely manner. Many participants attributed delay in first responder arrival to poor roads and excessive traffic. Also reported as contributing to delayed ambulance arrival to the scene is that ambulances are generally not granted the right-of-way when traveling. Many of the medics reported an average of 1-2 hours to get to the scene of injury or illness, irrespective of where you live, and then an additional 1-2 hours to get to the nearest hospital. The result is that the vast majority of patients arrive at a healthcare facility by private vehicle, taxi service, public transit or by foot. A participant recalled an incident when a pregnant woman was seen in a clinic and noted to have an elevated blood pressure. She was sent by public transportation to go to the hospital. Formal transportation was not arranged, and she had a seizure on the bus and died shortly thereafter before reaching the hospital. Even when an ambulance does arrive at the scene, there is no standardized approach to the care of injured or ill patients. Medics are prehospital personnel who transport patients by ambulance to clinics or hospitals. Medics who were present discussed their experience with feeling unsafe transferring patients, particularly trauma patients, who require well-coordinated patient handling to prevent cervical spine injury.

Cultural Considerations

Many participants, primarily healthcare providers, described their fear of retribution for delivering care outside of the hospital environment due to weak Good Samaritan protections. One physician recounted an experience of his colleague who was jailed for providing care to a patient and then transporting the patient in her private vehicle to the hospital. The patient ultimately succumbed to his injuries upon arrival to the hospital, and the physician was arrested by the police while they investigated the cause of injury. Other healthcare providers echoed this experience providing their own stories of similar circumstances where either themselves or colleagues were subject to harassment for simply providing prehospital care. Another participant recalled an incident where a man in a rural part of Nigeria was performing CPR on a female who suddenly collapsed. The neighbors reported the man to the girl's father as trying to kiss and fondle the girl instead of trying to save her life.

**Hospital Care Delivery**

A recurrent theme related to hospital care in Nigeria was *Vulnerability*. Many healthcare workers reflected on their sense of helplessness when caring for the ill and injured, while many laypersons dwelled on their fears of becoming ill or injured and being cared for in the current emergency care system. When surveyed on whether they would seek care in Nigeria versus abroad if they had the option, the vast majority answered abroad.

## Health Workforce

Healthcare workers in the groups shared clinical experiences with cases where alternative or less invasive interventions were not considered because of the lack of qualified personnel. An orthopedic surgeon present recalled a patient who presented to the hospital after he was run over by a truck and suffered a crush injury to the leg. Because of the delay presenting to the hospital and the extent of injury to the leg, the decision was made to amputate and the surgeon was a part of the operative team. He discussed his regret that, had there been a qualified surgeon with the capabilities of vascular and small nerve reconstruction, that the man's leg could have been saved.

Healthcare participants who worked in rural settings discussed their frustrations with the inequitable distribution of healthcare workforce stating that it is generally concentrated in major cities such as Lagos, Ibadan and Abuja. Many voiced that they felt overwhelmed and described many symptoms of burn out. Identified contributions to clinical exhaustion were poor training, inadequate skills acquisition, high patient-to-provider ratios, lack of security and insufficient administrative support. Many stories were told of incidents when patients and their families physically assaulted physicians because they disagree with their recommendations, are annoyed with long waiting times, or are frustrated with care delivery. As one participant put it, morale and motivation is lacking.

## Clinical Competency

Many healthcare participants admitted to inadequate training in triage. One participant recalled his previous work in a three-bed health facility in another African nation. The facility lacked an intensive care unit. As he recalled, despite the limited bed capacity, patients were managed well there because it was staffed by highly trained emergency medicine physicians who were able to recognize and treat emergencies. Another participant shared an incident when a patient was found to be aggressive. To address this patient's aggression, they administered diazepam, which works as a sedative. When this did not work, they administered chlorpromazine, which is an antipsychotic. Once the patient calmed down, they searched her phone and called many contacts. Eventually they reached her sister, who informed the team that the patient was diabetic. Only then did the team check her blood sugar revealing that it was dangerously low. With this new information, they began resuscitation with blood glucose and she eventually recovered, but the delay in glucose administration could have resulted in irreversible brain damage and even death.

Hospital Capacity

One participant who works in an emergency department spoke about the difficulty of accepting patients due to the space limitations. For this reason, many patients are refused entry and referred to other hospitals. A general sentiment though among participants was that if you are privileged and know the right people, you can get around limited hospital capacity. As one participant shared, he had a relative who needed oxygen, but when they arrived at the hospital,

there was no space. Fortunately, they knew the Governor and called him. Moments later, the participant's relative was admitted.

An additional limitation to care delivery, as noted by participants, is the availability of medical equipment and supplies. Many scrutinized the baseline scarcity of basic personal protective equipment like gloves. One participant mentioned that staff are encouraged to reuse gloves while at work and that if a patient wants the staff to change their gloves when caring for them, then the patient themselves would need to buy and supply the hospital staff with gloves. Another participant uses aprons or bed sheet linens to cover his hands in place of gloves. Further impediments related to laboratory and radiologic investigations also delay care. Healthcare providers mentioned that it may take days to get lab results back. Others discussed the difficulty obtaining radiographic studies such as x-rays, computed tomography (CT) scans, and magnetic resonance imaging (MRI).

#### Burden of Uncompensated Care

A participant shared an intimate story of her relative who was in respiratory distress. They took him to three hospitals before he was accepted and provided with oxygen. But by this time, it was too late and he eventually died. He was turned away from the two nearest private hospitals because of the inability to pay. One participant discussed the dichotomy experienced amongst Nigerians based on socioeconomic status. One woman, she recalled, had a minor motor

vehicle accident but because of her financial status, she was immediately taken to the nearest hospital, admitted within minutes, and tended to by various medical and surgical specialties. On the other hand, another man, involved in a traffic accident, arrived at the hospital unconscious, and care was delayed because he did not have money. After many calls to his family to secure funding, he was eventually cared for but unfortunately succumbed to his injuries. Another participant recalled an emotional story of a young child who fell on an iron rod which burned her abdominal wall to the point of exposing her viscera. She needed surgery but the family did not have the funds. The patient was admitted but waited many days until the medical students could raise funds to cover the procedure.

**Health System Stewardship**

Nigeria's healthcare system is "still in the pipeline" as many participants alluded to, resulting in *disconnected* coordination and collaboration amongst essential stakeholders, agencies and facilities relevant to emergency care delivery. The focus of health system challenges and solutions, among participants, centered on the functions of the central federal government and its responsibility in facilitating healthcare access and financing.

**Healthcare Access and Financing**

Many participants voiced their frustration that various components of the health system function in silos rather than an integrated manner. An identified barrier to improvements in hospital care is the

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2  
3 bureaucratic environment within the federal government and that there  
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5 does not seem to be a centralized office or agency coordinating  
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7 healthcare delivery at the national level to ensure equitable access  
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9 at the state and local level. Participants discussed the current  
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11 National Health Insurance Scheme (NHIS), which was meant to serve as a  
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13 solution and provide financial insurance for those seeking healthcare  
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15 services[18]. An issue recognized by healthcare workers is that if a  
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17 patient comes in with acute ailment, you have to first send a code to  
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19 the NHIS before rendering care to receive pre approval for care  
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21 rendered. And until you receive approval, all care provided prior to a  
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23 notification from the NHIS is not covered, which as one participant  
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25 stated, negates its utilization in emergency situations.  
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30 Many participants identified the unaffordable cost for medical care as  
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32 the reason patients seek care with traditional or alternative  
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34 healthcare providers. It is not until these remedies fail that many  
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36 patients present to a clinic or hospital. For example, many patients  
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38 cannot afford the cost of antiepileptic medications. One participant  
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40 described the common practice of burning the hand of a convulsing  
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42 child. This practice is thought to rid the child of evil spirits  
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44 causing the seizure. After this fails, the child is brought to a  
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46 hospital, having now suffered complications of both seizures and  
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48 burns. The overall impression of participants was that the aim of  
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50 sustainable healthcare access and financing is to reduce and  
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52 eventually eliminate health disparities, particularly those created by  
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54 economic privilege.  
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**DISCUSSION**

The participants identified the rudimentary components of emergency response, prehospital infrastructure, and community knowledge deficit of basic life support. The group provided examples of the vulnerabilities intrinsic to hospital care delivery such as an inadequate health workforce, deficient clinical competency for managing the acutely ill and injured, poor hospital capacity and multiple instances of delayed care because of poverty. Additionally, the participants revealed the disconnection between policies aimed at ensuring healthcare access and financing and the actual experiences of Nigerians who seek health services. Strengthening the Nigerian emergency care system will require implementing community-driven interventions concertedly at the prehospital, hospital and health systems levels.

**Prehospital Challenges and Opportunities**

The majority of community members can recognize an emergency but there remains a knowledge deficit on how to appropriately intervene during an emergency. A strategy to augment emergency care delivery is to train laypersons on basic life support. This has proven successful in many low-and-middle-income countries, even in Sub-Saharan Africa[19, 20]. Recognizing though that a fear of retribution for good deeds is present among the community, policy leaders must prioritize strengthening Good Samaritan laws. Well intended bystanders should be

empowered to initiate basic life support and be protected while doing so.

Lagos is one of the few states in Nigeria with a public ambulance transporting system, but many of these ambulances are non functional[21]. And for those that are, the ability of these ambulances to get to the scene is difficult with the current road traffic system. Resources must be dedicated to modernizing the prehospital infrastructure. Improved road networks that integrate even the most remote communities must be designed and maintained. Taking into account the impact of the growing population and its role in traffic, dedicated lanes for prehospital personnel, such as those utilized by bus rapid transit systems, should be incorporated into these network designs. Local governments need to invest in an adequate fleet of ambulances that are equipped with medical supplies, medications, oxygen, and reliable communication systems. Drivers of these ambulances must be trained in an accredited education system and evaluated for competency with didactic and clinical assessments. Ambulances should be strategically located to reach victims throughout a metropolitan region with centralized call centers in place to guide their response. Additionally, one national and universal emergency number should be recognized with toll-free calling accessible with all telecommunication services.

### **Hospital Challenges and Opportunities**

Nigeria is suffering from one of the highest brain drains globally[22]. Factors overwhelming the Nigerian workforce must be dealt with in order to encourage morale, motivate life long learning and incentivize against brain-drain. Strategic partnerships with established external organizations can help to build sustainable training programs in emergency medicine ensuring clinical competency in the recognition, management and definitive treatment of patients suffering from acute illness or injury. Quality training will encourage patients to appropriately utilize health services available to them as one report revealed that many Nigerians lack trust in available primary and secondary health facilities, bypassing them to seek care at even farther tertiary facilities[23]. Furthermore, it is essential to categorize health facilities and their capabilities so that patients and prehospital providers seek care at the most suitable facility. As one can imagine, inadequate resources can hinder definitive care and contribute to lives lost.

In a nation of 200 million, the population's potential can be maximized by integrating the large number of unemployed into the health workforce. This involves establishing health sector occupations that make use of an individual's intrinsic skills, such as medical technicians or language interpreters. This strategy will involve partnering with already existing professional bodies such as the National Medical Association. Deliberately employing individuals within the hospital will improve emergency care delivery, wages, standards of living, and health outcomes. Partnering with religious

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3 and holistic entities is also relevant as it will be crucial to have  
4 their support when attempting to address social and cultural norms  
5 that deter individuals from seeking appropriate care in health  
6 facilities in a timely manner[24]. Additionally, as the discussions  
7 revealed, timely and effective care can be provided when providers are  
8 appropriately trained despite poor infrastructure and limited  
9 capacity. Proper training in emergency and trauma resuscitation is  
10 essential to ensuring appropriate care delivery and improving patient  
11 outcomes.  
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## 24 **Health System Challenges and Opportunities**

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26 Emergency care is recognized as a costly discipline as it usually  
27 involves extensive investigations to evaluate and diagnose high risk  
28 injuries or illness. But despite its costs, global consensus is that  
29 all people should have access to emergent health services without the  
30 fear of financial hardship[25]. Some countries enact policies that  
31 require emergency care to be rendered irrespective of a patient's  
32 ability to pay[26]. Nigeria has similar policies requiring care  
33 delivery regardless of one's ability to pay, but the policy does not  
34 translate to the experiences of individuals who proclaim that  
35 financial capabilities are a factor in the care they receive[18]. This  
36 was a recurrent concern amongst participants. The National Health Act  
37 (NHA) was enacted in 2014 with the goal of improving healthcare  
38 financing and expanding care access, including emergency care, by  
39 establishing a Basic Health Care Provision Fund (BHCPF). The BHCPF  
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though was not actually included in the federal budget until 2018[27, 28].

More efforts need to be taken to ensure that the BHCPF is providing citizens with access to basic primary and emergency care as many Nigerians still endorse excessive out-of-pocket expenses for medical care. This can be accomplished with formalized public-private partnerships particularly among healthcare facilities, investing in modernized health facilities throughout the nation, and defining clear and distinct roles for the federal ministry of health, the various state ministries of health, and local government health agencies. Nigeria's ability to successfully implement the promises of the NHA could catapult the nation to be on track with international standards for healthcare access and quality.

**LIMITATIONS**

Study limitations should be considered. The focus groups were conducted amongst participants of an emergency medicine Symposium and therefore captured individuals actively engaged or interested in emergency care service delivery, many of whom are healthcare providers, making it difficult to generalize the opinions to the general population. The participants also attended conference sessions prior to participating in the study which may have biased their perceptions and influenced the discussions. The study captured a small sample size because it was limited to the participants of a symposium, again limiting the generalizability of the perceptions. And lastly, by

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3 nature of design, our study highlights the perceptions of community  
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5 members but recognizes that their opinions and claimed experiences are  
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7 subject to recall bias and cannot be verified.  
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## 10 11 **CONCLUSION**

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13 Our findings identified significant shortcomings in the Nigerian  
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15 emergency care system. Participants were able to outline challenges  
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17 and opportunities characterizing prehospital care delivery, hospital  
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19 care delivery, and health system stewardship. Themes also emerged to  
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21 describe the components of the emergency care system as rudimentary,  
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23 vulnerable and disconnected respectively. Going forward, healthcare  
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25 professionals, policymakers, and community leaders should carefully  
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27 consider the public's perceptions when designing and implementing  
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29 interventions to strengthen Nigeria's emergency care system. If  
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31 successful, these community-driven interventions may serve as a model  
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33 to improve emergency care systems throughout Africa.  
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## 38 **SUPPORTING DOCUMENTS**

39 Supplement 1 Focus group discussion Interview guide  
40  
41 Supplement 2 CASP Qualitative Checklist  
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43

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46  
47 Deaconess Medical Center, Boston, MA.  
48  
49

## 50 **CONFLICTS OF INTEREST**

51 All authors have no conflicts of interest to disclose  
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54

## 55 **AUTHOR CONTRIBUTIONS**

*Conception and design of the study:* All authors  
*Acquisition, analysis and interpretation of data:* AU, B Aiwonodagbon, B Akodu, AO  
*Drafting the manuscript:* AU, AO  
*Critical revisions to manuscript for intellectual content:* JS, SK  
*Supervision and final approval of manuscript version for publication:* BA, AO  
AU and AO take responsibility for the manuscript as a whole.

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Table 2 Thematic Categories and Supportive Quotes

Overarching Theme	Subtheme Categories	Representative Quotes
Rudimentary	Emergency Recognition and Response	<p>“Patient’s die because, [even if] we can provide help to the person, we don’t have the means to help.”</p> <p>“Everybody should know how to do CPR so when somebody drops dead, they don’t start pouring water and start screaming around, which is what we do, They start running around and forcing water down the person’s mouth.”</p>
	Ambulance and Frontline Providers	<p>“There is no guarantee that first responders will get there on time, or that the person is going to get the desired help, or that they would get to the hospital on time. There is no guarantee that there won’t be traffic. Like all the odds are stacked against you., so you rather not bother.”</p> <p>“The police will stop the ambulance asking them where they are going, even with a patient on board.”</p>
	Cultural Considerations	<p>“For instance, you want to do CPR for someone and [it] requires you to touch the person. You will not have the time to start explaining what you want to do; and if you go ahead, you may not even leave there alive!”</p> <p>“Helping people in emergency situations, one can be tagged as a culprit. If I see someone on the road who requires emergency care and I stop to help, maybe put the person in my car. If anything happens to the person and I’m stopped by FRSC [Federal Road Safety Corps], they always tend to assume the Good Samaritan is the culprit.”</p>
	Healthcare Workforce	<p>“In the hospital, you could see somebody passing coca cola urine right there sitting on the floor; you see another person convulsing still on the floor; then you look and there is just only one nurse trying to take care of a gamot of patients.”</p> <p>“There’s a kind of brain drain. Everybody is no longer motivated as before. People are like - what am I doing here? After all my mates or colleagues [abroad], they are out there getting well paid and seeing results and they can work happily. They are in a better environment. But you are here just stressed out. You can’t even help the patient as you have loved to. There are so many, you</p>

<b>Vulnerability</b>		know; they just get demotivated.”
	Clinical Competency	<p>“I was not well equipped in terms of training so I had to train myself in ACLS, BLS, and ATLS and that gave me more confidence.”</p> <p>“A patient with GCS 3, some of our colleagues actually transfer these patients with no airway or IV access and this reduces the chances of survival for the patient.”</p>
	Hospital Capacity	<p>“You can’t do investigations in emergencies. You need the results of your investigations in minutes. When you send an investigation the person comes back to say it will be ready the following day. Or even the next week.”</p> <p>“It was my first clinical exposure ever...The doctor on call had a patient but there was no bed space; there were no gloves. He told us to go anywhere to get gloves. It was a head injury and the man’s head was practically held together by bandages getting soaked and there were no gloves in the whole A&amp;E. We practically watched the patient die because there were no gloves anywhere.”</p> <p>“I picked up a patient in an ambulance. It was a case of head injury. I took him to [hospital 1]; there was no bed space. He was bleeding from all orifices. It was terrible and all efforts to arrest the bleeding proved abortive. They referred to [hospital 2]. I got to [hospital 2]; no bed space. So they said we should go to spill over. Patient had nothing on him - no phone, no relatives. In spillover, you must pay money, so I called my boss. He said to take him to the [hospital 3]. I got there and they say they cannot be managed; I was referred to [hospital 4]. On our way to [hospital 4], the patient expired.”</p>

	Burden of Uncompensated Care	<p>“Most times money is a hindrance because most emergency [departments] wouldn’t or may not attend to you if you don’t have money on you, without a proof that you are going to pay.”</p> <p>“Sometimes we need adrenaline. We need to resuscitate the patient. We don’t have it in our crash cart. Then we need the patient to get it. Before the patient will get it, it’s more than 30 minutes and the patient is already dead.”</p>
Disconnected	Healthcare Access	<p>“It shouldn’t be on us to be doing this, it should be on the government; the government should do this. So whatever we will talk about today, it should be focused on getting the government to work on this, so that all the burdens stacked against us will be taken away.”</p> <p>“In Nigeria, we don’t have a problem with drafting down laws, our problem is in enforcing those laws. And unfortunately, those that have been charged with doing that are our problem. So, someone has to police the police.”</p> <p>“Most of these patients are already there [at the church or mosque] where they are praying for them. And when they are almost dying, they come to the hospital.”</p>
	Healthcare Financing	<p>“To be very honest, if you bring money, you can easily be admitted in a private ward and you get everything you need.”</p> <p>“I personally believe that every single Nigerian is just one major health crisis from being in abject poverty, which means that we are all, like, at risk technically.”</p>

**Focus Group Facilitator Script – Emergency Medicine Symposium**  
**Lagos University Teaching Hospital**  
**Saturday, February 29, 2020**

**Facilitator:** Good morning / afternoon everyone. I want to first introduce myself and my assistant. We are facilitating a focus group discussion on the topic of Nigeria's current emergency care system. Before moving forward, I want to make sure that you are all aware that your participation in this focus group is VOLUNTARY. By no means is it compulsory. And at any time, you are free to leave, although I hope you will stay to complete the focus group in its entirety. Please state a verbal "YES" indicating your consent to participate in this focus group discussion.

**Participants:** YES

**Section 1**

**Q1:** I'd like to start the discussion by asking, what is a medical emergency?

**Facilitator:** Thank you for your ideas. A medical emergency is any life-threatening condition requiring rapid, immediate care. And according to the World Health Organization, an **emergency care system** is a health system that can effectively manages emergencies, such as acute illnesses and injuries and essentially save lives.

**Q2:** What are your thoughts about Nigeria's emergency care system?

**Q3:** By a show of hands, how many of you have witnessed an emergency in the past? Ok, so \_\_\_ out of \_\_\_.

**Q4:** How many of you have witnessed more than 3? Ok, so \_\_\_ out of \_\_\_.

**Q5:** By a show of hands – who would help someone during an emergency? Ok so \_\_\_ out of \_\_\_ would help someone during a medical emergency.

**Q6:** By a show of hands – who has helped someone during an emergency? Ok so \_\_\_ out of \_\_\_ have helped someone during an emergency.

**Q6 Follow Up:** Did you feel comfortable or prepared helping someone during an emergency? Please elaborate

**Q7:** Why would you help, or why would you not help, someone having an emergency?

**Q8:** If you said that you have or would help during an emergency – how would you help?

**Q9:** What do you think could make you and other people more likely to help?

**Q10:** Would anyone like to tell me about any emergencies that you have witnessed or experienced in the past (emergency examples include breathing problems, chest pain, trauma, birth complications). Elaborate, if you can, on how the emergencies were managed. What was done well. And what was not done well.

**Q10 Elaboration / Follow-Up Probes:**

☐ What type of medical emergency was it?

- ☐ Was someone at the incident able to assist? Who? (Policeman, layperson?)
- ☐ If there was someone at the incident to assist, what did that person do to help?
- ☐ Did you/the casualty need transport to a health facility for emergency care?
- ☐ How long did you/the casualty wait for transport? What transport was available?
- ☐ How long did it take to reach the facility?
- ☐ Did you encounter any challenges when trying to obtain emergency care?

*Allow as many people volunteer to describe their medical emergency, and probe only with the above points if they have not already covered them. After each person's sharing make sure to thank them and acknowledge that their contribution is very valuable though it may be tragic or emotional.*

**Facilitator:** Thank you all for sharing your experiences so far. The types of emergencies you have mentioned include .... (list a summary of what they have shared burns, motor vehicle accidents.....)

**Section 2**

**Q11:** Tell me about pre-hospital care (for instance ambulance, EMS, disaster preparedness) in Nigeria.

**Q12:** Tell me about the hospitals / health facilities in Nigeria

**Q13:** What are the barriers or challenges that you encounter when you are trying to access emergency care?

**Q13 Elaboration / Follow-Up Probes:**

- ☐ Where do you seek care for a medical emergency?
- ☐ Do you encounter any significant delays when trying to receive care for a medical emergency? What are they?
- ☐ How available is emergency care at your facility?

**Q14:** What are the factors that make it easier for you to access emergency care?

**Q15:** Thinking back to your experiences, what factors have made it easier to access emergency care?

**Q16:** What changes could you recommend to improve access to emergency care?

**Q17:** If you had the choice, where would you choose to seek care for an emergency (for instance, in Nigeria or abroad? Private versus Federal hospitals?)

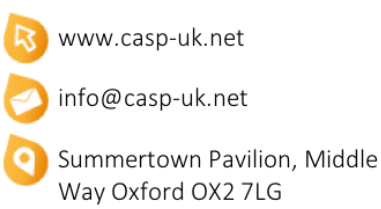
**Section 3**

**Q18:** Is there anything else that anyone would like to add that we have not already discussed? Or that they would like to elaborate on from what we've previously discussed?

**Facilitator:** Thank you so much for coming and sharing your experiences, thoughts, and opinions with us. Some of the experiences you have described involved death and tragedy.

You have provided us with valuable information that will be used to improve the emergency care system of Nigeria.

For peer review only



**CASP Checklist:** 10 questions to help you make sense of a **Qualitative** research

**How to use this appraisal tool:** Three broad issues need to be considered when appraising a qualitative study:

- Are the results of the study valid? (Section A)
- What are the results? (Section B)
- Will the results help locally? (Section C)

The 10 questions on the following pages are designed to help you think about these issues systematically. The first two questions are screening questions and can be answered quickly. If the answer to both is “yes”, it is worth proceeding with the remaining questions. There is some degree of overlap between the questions, you are asked to record a “yes”, “no” or “can’t tell” to most of the questions. A number of italicised prompts are given after each question. These are designed to remind you why the question is important. Record your reasons for your answers in the spaces provided.

**About:** These checklists were designed to be used as educational pedagogic tools, as part of a workshop setting, therefore we do not suggest a scoring system. The core CASP checklists (randomised controlled trial & systematic review) were based on JAMA ‘Users’ guides to the medical literature 1994 (adapted from Guyatt GH, Sackett DL, and Cook DJ), and piloted with health care practitioners.

For each new checklist, a group of experts were assembled to develop and pilot the checklist and the workshop format with which it would be used. Over the years overall adjustments have been made to the format, but a recent survey of checklist users reiterated that the basic format continues to be useful and appropriate.

**Referencing:** we recommend using the Harvard style citation, i.e.: *Critical Appraisal Skills Programme (2018). CASP (insert name of checklist i.e. Qualitative) Checklist. [online] Available at: URL. Accessed: Date Accessed.*

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Paper for appraisal and reference:

Section A: Are the results valid?

1. Was there a clear statement of the aims of the research?

Yes	<input type="checkbox"/>
Can't Tell	<input type="checkbox"/>
No	<input type="checkbox"/>

- HINT: Consider
- what was the goal of the research
  - why it was thought important
  - its relevance

Comments:

2. Is a qualitative methodology appropriate?

Yes	<input type="checkbox"/>
Can't Tell	<input type="checkbox"/>
No	<input type="checkbox"/>

- HINT: Consider
- If the research seeks to interpret or illuminate the actions and/or subjective experiences of research participants
  - Is qualitative research the right methodology for addressing the research goal

Comments:

Is it worth continuing?

3. Was the research design appropriate to address the aims of the research?

Yes	<input type="checkbox"/>
Can't Tell	<input type="checkbox"/>
No	<input type="checkbox"/>

- HINT: Consider
- if the researcher has justified the research design (e.g. have they discussed how they decided which method to use)

Comments:

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4. Was the recruitment strategy appropriate to the aims of the research?

Yes  
Can't Tell  
No

Yes

Can't Tell

No

HINT: Consider

- If the researcher has explained how the participants were selected
- If they explained why the participants they selected were the most appropriate to provide access to the type of knowledge sought by the study
- If there are any discussions around recruitment (e.g. why some people chose not to take part)

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5. Was the data collected in a way that addressed the research issue?

Yes  
Can't Tell  
No

Yes

Can't Tell

No

HINT: Consider

- If the setting for the data collection was justified
- If it is clear how data were collected (e.g. focus group, semi-structured interview etc.)
- If the researcher has justified the methods chosen
- If the researcher has made the methods explicit (e.g. for interview method, is there an indication of how interviews are conducted, or did they use a topic guide)
- If methods were modified during the study. If so, has the researcher explained how and why
- If the form of data is clear (e.g. tape recordings, video material, notes etc.)
  - If the researcher has discussed saturation of data

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Comments:

6. Has the relationship between researcher and participants been adequately considered?

Yes	<input type="checkbox"/>
Can't Tell	<input type="checkbox"/>
No	<input type="checkbox"/>

HINT: Consider

- If the researcher critically examined their own role, potential bias and influence during (a) formulation of the research questions (b) data collection, including sample recruitment and choice of location
- How the researcher responded to events during the study and whether they considered the implications of any changes in the research design

Comments:

#### Section B: What are the results?

7. Have ethical issues been taken into consideration?

Yes	<input type="checkbox"/>
Can't Tell	<input type="checkbox"/>
No	<input type="checkbox"/>

HINT: Consider

- If there are sufficient details of how the research was explained to participants for the reader to assess whether ethical standards were maintained
- If the researcher has discussed issues raised by the study (e.g. issues around informed consent or confidentiality or how they have handled the effects of the study on the participants during and after the study)
- If approval has been sought from the ethics committee

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8. Was the data analysis sufficiently rigorous?

Yes

Can't Tell

No

HINT: Consider

- If there is an in-depth description of the analysis process
- If thematic analysis is used. If so, is it clear how the categories/themes were derived from the data
- Whether the researcher explains how the data presented were selected from the original sample to demonstrate the analysis process
- If sufficient data are presented to support the findings
  - To what extent contradictory data are taken into account
- Whether the researcher critically examined their own role, potential bias and influence during analysis and selection of data for presentation

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9. Is there a clear statement of findings?

Yes

Can't Tell

No

HINT: Consider whether

- If the findings are explicit
- If there is adequate discussion of the evidence both for and against the researcher's arguments
- If the researcher has discussed the credibility of their findings (e.g. triangulation, respondent validation, more than one analyst)
- If the findings are discussed in relation to the original research question

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Comments:

Section C: Will the results help locally?

10. How valuable is the research?

HINT: Consider

- If the researcher discusses the contribution the study makes to existing knowledge or understanding (e.g. do they consider the findings in relation to current practice or policy, or relevant research-based literature
- If they identify new areas where research is necessary
- If the researchers have discussed whether or how the findings can be transferred to other populations or considered other ways the research may be used

Comments:

# BMJ Open

## Perspectives on the current state of Nigeria's emergency care system among participants of an Emergency Medicine symposium: a qualitative appraisal

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Perspectives on the current state of Nigeria's emergency care system among participants of an  
Emergency Medicine symposium: a qualitative appraisal

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Word Count: Full Text: 4,367

Key Words: Qualitative research; Emergency medical services; Developing countries; Low and middle income country

**Abstract**

**Introduction:** Emergency care systems provide timely and relevant care to the acutely ill and injured. Published commentaries have characterized deficiencies in the Nigerian emergency care system and offered potential solutions but have not included the perspectives of the Nigerian public. A more inclusive approach that includes feedback from the public may help improve the Nigerian emergency care system through better understanding of the needs, values, and expectations of the community.

**Methods:** Community members participated in focus group discussions that were randomly divided into small groups led by two trained facilitators. These facilitators asked open-ended, semi-structured questions to lead discussions in the English language. Participant responses were audio-recorded and transcribed verbatim into transcripts. Two independent investigators employed conventional content analysis to code the transcripts until thematic saturation was achieved.

**Results:** Three descriptive themes emerged characterizing the current state of Nigeria’s emergency care system as it relates to prehospital care delivery, hospital care delivery and health system governance: rudimentary, vulnerable, and disconnected. At the prehospital level, concepts revolved around emergency recognition and response, ambulance and frontline providers, and cultural norms. At the hospital level, concepts centered around the health

workforce, clinical competency, hospital capacity and the burden of financial hardship. At the health system level, concepts concentrated on healthcare access and healthcare financing.

Opportunities for emergency care system improvement at each component level were identified and explored.

**Conclusions:** The participants in this study identified shortcomings and opportunities to improve prehospital care, hospital care, and health system governance. The results of this study may help healthcare professionals, policymakers, and community leaders identify gaps in the emergency care system and offer solutions in harmony with the needs, values and expectations of the community. If successful, these community-informed interventions may serve as a model to improve emergency care systems throughout Africa.

**Word Count:** 296

**Key Words:** Qualitative research; Emergency medical services; Developing countries; Low and middle income country

### **Strengths and Limitations of this study**

- This qualitative study elicits feedback from both healthcare professionals and non-healthcare professionals regarding their emergency care needs.
- This study utilized a collaborative approach with local Nigerian research partners.
- The strength of the conclusions are weakened by the small sample size of participants involved making it difficult to generalize their opinions to the general population.

## **INTRODUCTION**

On the 28<sup>th</sup> of May 2019, the Seventy-second World Health Assembly unanimously passed a resolution recognizing the essential role emergency care systems play in preventing death and

disability from acute illness and injury[1]. Many low-and-middle income countries (LMICs) recognize the essential role of emergency care systems but are challenged in their pursuit of developing their emergency care system because they have traditionally prioritized resources on infectious diseases and maternal and child health[2, 3]. Universal health coverage, which ensures access to quality and effective health services without the burden of financial hardship, should be a priority objective for LMICs while developing their respective emergency care systems [4].

Nigeria's health system has struggled to meet the needs of an ever-growing population despite economic advances that have increased the annual gross domestic product (GDP) per capita from \$568 in 2000 to \$2,230 in 2019. [5, 6]. When compared globally, Nigeria is ranked 142nd out of 195 countries when evaluating its performance on a comparative healthcare access and quality index[7]. Further, Nigeria frequently loses its trained healthcare providers to other countries suffering from one of the highest brain drains globally[8]. Nigeria's ability to deliver accessible quality medical care is limited by its current healthcare infrastructure. Health facilities are poorly resourced and understaffed, especially in rural areas[9]. Despite having the largest economy in Africa, Nigeria has 0.5 hospital beds per 1000 people, which falls below the average of 1.0 hospital bed per 1000 people in other Sub-Saharan African countries[9, 10]. Moreover, there are only 47 tertiary hospitals – a mix of public, private, and faith-based institutions – in the country with a population of over 200 million people[11].

It is estimated that over half of all deaths in LMICs can be averted by effective emergency care delivery[12]. In Nigeria, that would translate to approximately 1,000,000 lives saved every year, or 3,000 lives every day[13,14]. Like in most LMICs, Nigerian emergency departments are run

by providers with little to no dedicated specialty training in emergency care as there are no recognized post graduate training programs in Emergency Medicine[15, 16]. It is estimated that, of the 1.6 million deaths recorded annually in Nigeria, 10-15% occur in emergency departments[17]. Lagos is one of the few states in Nigeria with a public ambulance transporting system, but many of these ambulances are non-functional[18]. And for those that are, the ability of these ambulances to get to the scene is difficult with the current road traffic system[19]. Commentaries published by healthcare professionals have characterized deficiencies in the Nigerian emergency care system and offered potential solutions[20-22]. However, these commentaries have not included the perspectives of the Nigerian public. A more inclusive approach that includes feedback from the public may help policymakers improve the Nigerian emergency care system through better understanding of the needs, values, and expectations of the community.

We sought to identify the public's perceptions of Nigeria's emergency care system at an emergency medicine symposium in Lagos, Nigeria, on the 28<sup>th</sup> of March, 2020. Members of the local community - both health professionals and laypeople - gathered to share perspectives on strengthening the Nigerian emergency care system and ultimately saving lives. We facilitated discussions with symposium participants to better understand their impression of Nigeria's emergency care system – including the current state of healthcare delivery, challenges to seeking and providing timely emergency care, and opportunities for improving upon the emergency care system so that it meets the needs of the populace.

## METHODS

**Study Design**

Focus groups are recognized as ideal avenues for investigating complex and unique concepts, particularly when they are dependent on obscure factors or determinants[23, 24]. We invited participants in an emergency medicine symposium - an ideal setting to gather members of the public with insight and interest - to participate in focus group discussions centered on perceptions of the emergency care system in Nigeria. The symposium was hosted by WeBelieve Health, a non-profit organization, in Lagos, Nigeria. The mission of WeBelieve Health is to increase access to quality care for Nigerians and to facilitate knowledge sharing to improve healthcare delivery [25]. The objective of the symposium was to outline the current state of emergency medicine in Nigeria and to brainstorm strategies to improve emergency care delivery in the country. The researchers of this study are not directly affiliated with WeBelieve Health but instead collaborated with the non-profit organization. The researchers all conduct research in global health, and they are composed of emergency medicine physicians, a family medicine physician and a public health physician.

**Patient Involvement**

There was no patient involvement in the design, conduct, reporting, or dissemination plans of our research.

**Recruitment of Participants**

Participants were made aware of our intention to conduct focus group discussions at the commencement of the symposium. Participation was voluntary and without restriction or incentive. A total of 66 symposium attendees, 43.42% of the total 152 symposium registrants,

agreed to participate. Fifty-two participants were healthcare professionals, which included medical officers, surgeons, nurses, and medics, and fourteen were non-healthcare professionals, which included reporters, business professionals and policy makers[Table 1]. In order to ensure a random grouping of healthcare and non-healthcare participants were divided by convenience sampling by numbering off 1-7 to form groups of 8-11 people.

Table 1 Demographic data of discussion group participants

		<b>Number of Participants (n=66)</b>	<b>Percentage</b>
Sex	Male	33	50.0%
	Female	33	50.0%
Occupation	Physician	29	43.9%
	Nurse	3	4.5%
	Medic	19	28.8%
	Medical Student	1	1.5%
	Non-Healthcare Professionals	14	21.2%

### Data Collection and Management

We collaborated with the Department of Community Health and Primary Care at the University of Lagos College of Medicine (LUTH) to facilitate the seven focus group discussions.

Facilitators from LUTH were only involved with data collection and not data management or

analysis. Each group was led by two facilitators; one facilitator served as the moderator and the other facilitator served as the assistant. Moderators were experienced in qualitative data analysis and conducting focus groups. Assistants were community volunteers and were provided same day training on the principles and processes of qualitative data collection and management. Each facilitator was fluent in English and pidgin English. The focus groups were conducted in English language.

Small group facilitators obtained verbal consent from each participant at the beginning of each focus group discussion. Facilitators utilized open-ended, semi-structured questions pre-developed and included in an interview guide adopted from focus group scripts utilized in a Zambian pilot study[26] [Supplement 1]. The script was designed to capture community member opinions specifically about emergency care making it an excellent template to use, with adaptation, in our study. The focus groups were audio recorded with a digital voice recorder and transcribed verbatim in English by the facilitator assistant into Microsoft Word 13, version 15.0. NVivo version 12, a computer-assisted qualitative data analysis software, was utilized to facilitate data management and organization.

**Data Analysis**

Utilizing a team-based approach, we employed conventional content analysis to apply codes that emerged directly from the narrative data. Two research members, also referred to as investigators, coded independently by carefully exploring each transcript to ensure recognition of

the most salient codes and patterns. The investigators then compared their applied codes and categorized the emerging codes into overarching themes using in-vivo descriptors embedded directly in the text. Shared decision making continued until group consensus was achieved. The investigators also conducted quality assessments of the results with the SRQR checklist[27, Supplement 2].

## Ethics

The Institutional Review Board (IRB) at the Lagos University Teaching Hospital and at Beth Israel Deaconess Medical Center provided ethical approval for this study.

## RESULTS

The interview guide was developed to explore the participants' experiences and interactions with the emergency care system at the prehospital setting, the hospital setting and at the health system level. Participants further characterized their perceived challenges at each of these sectors as it relates to pre-hospital care delivery, hospital care delivery, and health system governance. Challenges were classified by descriptive themes according to the most commonly used terms by the focus group participants. The descriptive themes were rudimentary, vulnerable and disconnected[Table 2].

Table 2 Thematic Categories and Supportive Quotes

Overarching Theme	Subtheme Categories	Representative Quotes from Focus Group Participants
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Rudimentary	Emergency Recognition and Response	<p>“Patient’s die because, [even if] we can provide help to the person, we don’t have the means to help.”</p> <p>“Everybody should know how to do CPR so when somebody drops dead, they don’t start pouring water and start screaming around, which is what we do, They start running around and forcing water down the person’s mouth.”</p>
	Ambulance and Frontline Providers	<p>“There is no guarantee that first responders will get there on time, or that the person is going to get the desired help, or that they would get to the hospital on time. There is no guarantee that there won’t be traffic. Like all the odds are stacked against you., so you rather not bother.”</p> <p>“The police will stop the ambulance asking them where they are going, even with a patient on board.”</p>
	Cultural Considerations	<p>“For instance, you want to do CPR for someone and [it] requires you to touch the person. You will not have the time to start explaining what you want to do; and if you go ahead, you may not even leave there alive!”</p> <p>“Helping people in emergency situations, one can be tagged as a culprit. If I see someone on the road who requires emergency care and I stop to help, maybe put the person in my car. If anything happens to the person and I’m stopped by FRSC [Federal Road Safety Corps], they always tend to assume the Good Samaritan is the culprit.”</p>
	Healthcare Workforce	<p>“In the hospital, you could see somebody passing coca cola urine right there sitting on the floor; you see another person convulsing still on the floor; then you look and there is just only one nurse trying to take care of a gamot of patients.”</p> <p>“There’s a kind of brain drain. Everybody is no longer motivated as before. People are like - what am I doing here? After all my mates or colleagues [abroad], they are out there getting well paid and seeing results and they can work happily. They are in a better environment. But you are here just stressed out. You can’t even help the patient as you have loved to. There are so many, you know; they just get demotivated.”</p>

<b>Vulnerability</b>	Clinical Competency	<p>“I was not well equipped in terms of training so I had to train myself in ACLS, BLS, and ATLS and that gave me more confidence.”</p> <p>“A patient with GCS 3, some of our colleagues actually transfer these patients with no airway or IV access and this reduces the chances of survival for the patient.”</p>
	Hospital Capacity	<p>“You can’t do investigations in emergencies. You need the results of your investigations in minutes. When you send an investigation the person comes back to say it will be ready the following day. Or even the next week.”</p> <p>“It was my first clinical exposure ever...The doctor on call had a patient but there was no bed space; there were no gloves. He told us to go anywhere to get gloves. It was a head injury and the man’s head was practically held together by bandages getting soaked and there were no gloves in the whole A&amp;E. We practically watched the patient die because there were no gloves anywhere.”</p> <p>“I picked up a patient in an ambulance. It was a case of head injury. I took him to [hospital 1]; there was no bed space. He was bleeding from all orifices. It was terrible and all efforts to arrest the bleeding proved abortive. They referred to [hospital 2]. I got to [hospital 2]; no bed space. So they said we should go to spill over. Patient had nothing on him - no phone, no relatives. In spillover, you must pay money, so I called my boss. He said to take him to the [hospital 3]. I got there and they say they cannot be managed; I was referred to [hospital 4]. On our way to [hospital 4], the patient expired.”</p>
	Financial Considerations of Emergency Care	<p>“Most times money is a hindrance because most emergency [departments] wouldn’t or may not attend to you if you don’t have money on you, without a proof that you are going to pay.”</p> <p>“Sometimes we need adrenaline. We need to resuscitate the patient. We don’t have it in our crash cart. Then we need the patient to get it. Before the patient will get it, it’s more than 30 minutes and the patient is already dead.”</p>

Disconnected	Healthcare Access	<p>“It shouldn’t be on us to be doing this, it should be on the government; the government should do this. So whatever we will talk about today, it should be focused on getting the government to work on this, so that all the burdens stacked against us will be taken away.”</p> <p>“In Nigeria, we don’t have a problem with drafting down laws, our problem is in enforcing those laws. And unfortunately, those that have been charged with doing that are our problem. So, someone has to police the police.”</p> <p>“Most of these patients are already there [at the church or mosque] where they are praying for them. And when they are almost dying, they come to the hospital.”</p>
	Healthcare Financing	<p>“To be very honest, if you bring money, you can easily be admitted in a private ward and you get everything you need.”</p> <p>“I personally believe that every single Nigerian is just one major health crisis from being in abject poverty, which means that we are all, like, at risk technically.”</p>

Pre-Hospital Care Delivery

*Rudimentary* was a repeated descriptor for the undeveloped, or as some participants stated “nonexistent,” infrastructure currently in place to deliver care to patients at the scene of injury or illness. It also represented the community understanding of basic life support interventions such as performing cardiopulmonary resuscitation (CPR). An overall impression was that effective and prioritized interventions in prehospital care delivery would result in the biggest impact to Nigeria’s emergency care system.

Emergency Recognition and Response

The first step in emergency response is recognizing the emergency. Participants generally

defined an emergency as any condition that, if not provided urgent attention, will result in loss of life or long-lasting disability. The vast majority of the participants (90.00%) verbalized that they had personally witnessed an emergency, with 80.00% having witnessed an emergency on at least three separate occasions[Table 3]. Although many stated that they are willing to help a victim in need of emergency care, they lack training in providing basic life support, and the first aid equipment needed to facilitate care delivery is not readily available. One participant mentioned a time when he witnessed a woman being hit by an okada (*okada is a common motorcycle taxi in Nigeria*). He didn't offer help because he did not have a first aid kit, and therefore he did not feel empowered to provide care without medical supplies. For this reason, the majority of patients receive initial care by family members or bystanders who lack formal training.

Table 3 Types of emergencies most commonly referenced

Trauma	Falls
	Road traffic accidents
	Mass casualty incidents
Medical	Asthma
	Malaria
	Stroke
	Perforated peptic ulcer

### Ambulances and Frontline Providers

There were disagreements related to the presence of a universal access number that individuals can call to report and request emergency help. Multiple numbers were identified as the universal

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3 emergency access number in Nigeria: 199, 112 and 122. 122 was the most recognized number  
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5 although many discussed that it was unreliable. If successful in reaching an operator to dispatch  
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7 emergency personnel, the next challenge is having the ambulance reach the patient in a timely  
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9 manner. Many participants attributed delay in first responder arrival to poor roads and excessive  
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11 traffic. Also reported as contributing to delayed ambulance arrival to the scene is that  
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14 ambulances are generally not granted the right-of-way when traveling. Many of the medics  
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16 reported an average of 1-2 hours to get to the scene of injury or illness, irrespective of where you  
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18 live, and then an additional 1-2 hours to get to the nearest hospital. The result is that the vast  
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20 majority of patients arrive at a healthcare facility by private vehicle, taxi service, public transit or  
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22 by foot. A participant recalled an incident when a pregnant woman was seen in a clinic and noted  
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24 to have an elevated blood pressure. She was sent by public transportation to go to the hospital.  
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26 Formal transportation was not arranged, and she had a seizure on the bus and died shortly  
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28 thereafter before reaching the hospital. Even when an ambulance does arrive at the scene, there is  
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30 no standardized approach to the care of injured or ill patients. Medics are prehospital personnel  
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32 who transport patients by ambulance to clinics or hospitals. Medics who were present discussed  
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34 their experience with feeling unsafe transferring patients, particularly trauma patients, who  
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36 require well-coordinated patient handling to prevent cervical spine injury.  
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45 Cultural Considerations

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47 Many participants, primarily healthcare providers, described their fear of retribution for  
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49 delivering care outside of the hospital environment due to weak Good Samaritan protections.  
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51 One physician recounted an experience of his colleague who was jailed for providing care to a  
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53 patient and then transporting the patient in her private vehicle to the hospital. The patient  
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ultimately succumbed to his injuries upon arrival to the hospital, and the physician was arrested by the police while they investigated the cause of injury. Other healthcare providers echoed this experience providing their own stories of similar circumstances where either themselves or colleagues were subject to harassment for simply providing prehospital care. Another participant recalled an incident where a man in a rural part of Nigeria was performing CPR on a female who suddenly collapsed. The neighbors reported the man to the girl's father as trying to kiss and fondle the girl instead of trying to save her life.

### Hospital Care Delivery

A recurrent theme related to hospital care in Nigeria was *Vulnerability*. Many healthcare workers reflected on their sense of helplessness when caring for the ill and injured, while many laypersons dwelled on their fears of becoming ill or injured and being cared for in the current emergency care system. When surveyed on whether they would seek care in Nigeria versus abroad if they had the option, the vast majority answered abroad.

### Health Workforce

Healthcare workers in the groups shared clinical experiences with cases where alternative or less invasive interventions were not considered because of the lack of qualified personnel. An orthopedic surgeon present recalled a patient who presented to the hospital after he was run over by a truck and suffered a crush injury to the leg. Because of the delay presenting to the hospital and the extent of injury to the leg, the decision was made to amputate and the surgeon was a part of the operative team. He discussed his regret that, had there been a qualified surgeon with the capabilities of vascular and small nerve reconstruction, that the man's leg could have been saved.

Healthcare participants who worked in rural settings discussed their frustrations with the inequitable distribution of healthcare workforce stating that it is generally concentrated in major cities such as Lagos, Ibadan and Abuja. Many voiced that they felt overwhelmed and described many symptoms of burn out. Identified contributions to clinical exhaustion were poor training, inadequate skills acquisition, high patient-to-provider ratios, lack of security and insufficient administrative support. Many stories were told of incidents when patients and their families physically assaulted physicians because they disagree with their recommendations, are annoyed with long waiting times, or are frustrated with care delivery. As one participant put it, morale and motivation is lacking.

Clinical Competency

Many healthcare participants admitted to inadequate training in triage. One participant recalled his previous work in a three-bed health facility in another African nation. The facility lacked an intensive care unit. As he recalled, despite the limited bed capacity, patients were managed well there because it was staffed by highly trained emergency medicine physicians who were able to recognize and treat emergencies. Another participant shared an incident when a patient was found to be aggressive. To address this patient’s aggression, they administered diazepam, which works as a sedative. When this did not work, they administered chlorpromazine, which is an antipsychotic. Once the patient calmed down, they searched her phone and called many contacts. Eventually they reached her sister, who informed the team that the patient was diabetic. Only then did the team check her blood sugar revealing that it was dangerously low. With this new

information, they began resuscitation with blood glucose and she eventually recovered, but the delay in glucose administration could have resulted in irreversible brain damage and even death.

### Hospital Capacity

One participant who works in an emergency department spoke about the difficulty of accepting patients due to the space limitations. For this reason, many patients are refused entry and referred to other hospitals. A general sentiment though among participants was that if you are privileged and know the right people, you can get around limited hospital capacity. As one participant shared, he had a relative who needed oxygen, but when they arrived at the hospital, there was no space. Fortunately, they knew the Governor and called him. Moments later, the participant's relative was admitted.

An additional limitation to care delivery, as noted by participants, is the availability of medical equipment and supplies. Many scrutinized the baseline scarcity of basic personal protective equipment like gloves. One participant mentioned that staff are encouraged to reuse gloves while at work and that if a patient wants the staff to change their gloves when caring for them, then the patient themselves would need to buy and supply the hospital staff with gloves. Another participant uses aprons or bed sheet linens to cover his hands in place of gloves. Further impediments related to laboratory and radiologic investigations also delay care. Healthcare providers mentioned that it may take days to get lab results back. Others discussed the difficulty obtaining radiographic studies such as x-rays, computed tomography (CT) scans, and magnetic resonance imaging (MRI).

Financial Considerations of Emergency Care

A participant shared an intimate story of her relative who was in respiratory distress. They took him to three hospitals before he was accepted and provided with oxygen. But by this time, it was too late and he eventually died. He was turned away from the two nearest private hospitals because of the inability to pay. One participant discussed the dichotomy experienced amongst Nigerians based on socioeconomic status. One woman, she recalled, had a minor motor vehicle accident but because of her financial status, she was immediately taken to the nearest hospital, admitted within minutes, and tended to by various medical and surgical specialties. On the other hand, another man, involved in a traffic accident, arrived at the hospital unconscious, and care was delayed because he did not have money. After many calls to his family to secure funding, he was eventually cared for but unfortunately succumbed to his injuries. Another participant recalled an emotional story of a young child who fell on an iron rod which burned her abdominal wall to the point of exposing her viscera. She needed surgery but the family did not have the funds. The patient was admitted but waited many days until the medical students could raise funds to cover the procedure.

Health System Governance

Nigeria’s healthcare system is “still in the pipeline” as many participants alluded to, resulting in *disconnected* coordination and collaboration amongst essential stakeholders, agencies and facilities relevant to emergency care delivery. The focus of health system challenges and solutions, among participants, centered on the functions of the central federal government and its responsibility in facilitating healthcare access and financing.

## Healthcare Access and Financing

Many participants voiced their frustration that various components of the health system function in silos rather than an integrated manner. An identified barrier to improvements in hospital care is the bureaucratic environment within the federal government and that there does not seem to be a centralized office or agency coordinating healthcare delivery at the national level to ensure equitable access at the state and local level. Participants discussed the current National Health Insurance Scheme (NHIS), which was meant to serve as a solution and provide financial insurance for those seeking healthcare services[28]. An issue recognized by healthcare workers is that if a patient comes in with acute ailment, you have to first send a code to the NHIS before rendering care to receive pre approval for care rendered. And until you receive approval, all care provided prior to a notification from the NHIS is not covered, which as one participant stated, negates its utilization in emergency situations.

Many participants identified the unaffordable cost for medical care as the reason patients seek care with traditional or alternative healthcare providers. It is not until these remedies fail that many patients present to a clinic or hospital. For example, many patients cannot afford the cost of antiepileptic medications. One participant described the common practice of burning the hand of a convulsing child. This practice is thought to rid the child of evil spirits causing the seizure. After this fails, the child is brought to a hospital, having now suffered complications of both seizures and burns. The overall impression of participants was that the aim of sustainable healthcare access and financing is to reduce and eventually eliminate health disparities, particularly those created by economic privilege.

**DISCUSSION**

The participants identified the rudimentary components of emergency response, prehospital infrastructure, and community knowledge deficit of basic life support. The group provided examples of the vulnerabilities intrinsic to hospital care delivery such as an inadequate health workforce, deficient clinical competency for managing the acutely ill and injured, poor hospital capacity and multiple instances of delayed care because of poverty. Additionally, the participants revealed the disconnection between policies aimed at ensuring healthcare access and financing and the actual experiences of Nigerians who seek health services. Strengthening the Nigerian emergency care system will require implementing community-informed interventions concertedly at the prehospital, hospital and health systems levels.

**Prehospital Challenges and Opportunities**

The majority of community members reported being able to recognize an emergency but there remains a knowledge deficit on how to appropriately intervene during an emergency. One strategy to augment emergency care delivery is to train laypersons on basic life support, which has proven successful in many LMICs, including in Sub-Saharan Africa[29, 30]. Participants in this study recognized that a fear of retribution for good deeds is present among the community, suggesting that policy leaders should prioritize strengthening Good Samaritan laws. Well intended bystanders should be empowered to initiate basic life support and be protected while doing so[12].

The findings here suggest that resources should be dedicated to modernizing the prehospital infrastructure as well as the road traffic networks that integrate even the most remote

communities[19]. Solutions have been identified and proposed that are applicable to the Nigerian context[31]. Local governments need to invest in an adequate fleet of ambulances that are equipped with medical supplies, medications, oxygen, and reliable communication systems. Drivers of these ambulances must be trained in an accredited education system and evaluated for competency with didactic and clinical assessments. Ambulances should be strategically located to reach victims throughout a metropolitan region with centralized call centers in place to guide their response. Additionally, one national and universal emergency number should be recognized with toll-free calling accessible with all telecommunication services[32, 33].

### **Hospital Challenges and Opportunities**

Many Nigerians lack trust in available primary and secondary health facilities, bypassing them to seek care at even farther tertiary facilities[34]. The focus groups identified factors that are overwhelming the Nigerian workforce and must be dealt with in order to encourage morale, motivate lifelong learning and incentivize against brain-drain. Strategic partnerships with established external organizations can help to build sustainable training programs in emergency medicine ensuring clinical competency in the recognition, management and definitive treatment of patients suffering from acute illness or injury and have been successful in similar settings[35]. Participants reported that quality training will encourage patients to appropriately utilize health services available to them locally, improving access to care. Existing health facilities should be categorized based on their capabilities so that patients and prehospital providers can seek care at the most suitable facility, which may support allocation of limited resources[12].

In a nation of 200 million, the population’s potential can be maximized by integrating the large number of unemployed into the health workforce. Participants suggested establishing health sector occupations that make use of an individual's intrinsic skills, such as medical technicians or language interpreters in partnership with already existing professional bodies such as the National Medical Association. Another suggested approach involves partnering with religious and holistic entities to address social and cultural norms that deter individuals from seeking appropriate care in health facilities in a timely manner[36]. Additionally, as the discussions revealed, timely and effective care can be provided when providers are appropriately trained despite poor infrastructure and limited capacity. Proper training in emergency and trauma resuscitation is essential to ensuring appropriate care delivery and improving patient outcomes[12, 33].

**Health System Challenges and Opportunities**

Emergency care may involve extensive investigations to evaluate and diagnose high risk injuries or illness which can be costly. But despite its costs, global consensus is that all people should have access to emergent health services without the fear of financial hardship[4]. Some countries, like the United States, have enacted policies that require emergency care to be rendered irrespective of a patient’s ability to pay[37]. Nigeria has similar policies requiring care delivery regardless of one’s ability to pay, but the policy does not translate to the experiences of individuals who proclaim that financial capabilities are a factor in the care they receive[28]. This was a recurrent concern amongst participants. The National Health Act (NHA) was enacted in 2014 with the goal of improving healthcare financing and expanding care access, including

emergency care, by establishing a Basic Health Care Provision Fund (BHCPF). The BHCPF though was not actually included in the federal budget until 2018[38, 39].

According to the World Bank, of the \$74 per capita spent on health expenditures in Nigeria, 77% is paid out-of-pocket[40, 41]. This is comparison to aggregate data revealing that globally only 18% of health expenditures are paid out-of-pocket[42]. More efforts need to be taken to ensure that the BHCPF is providing citizens with access to basic primary and emergency care as well as universal health coverage. This can be accomplished with formalized public-private partnerships particularly among healthcare facilities, investing in modernized health facilities throughout the nation, and defining clear and distinct roles for the federal ministry of health, the various state ministries of health, and local government health agencies. Nigeria's ability to successfully implement the promises of the NHA could catapult the nation to be on track with international standards for healthcare access and quality.

## LIMITATIONS

Study limitations should be considered. The focus groups were conducted amongst participants of an emergency medicine Symposium and therefore captured individuals actively engaged or interested in emergency care service delivery, many of whom are healthcare providers, making it difficult to generalize the opinions to the general population. The participants also attended conference sessions prior to participating in the study which may have biased their perceptions and influenced the discussions. The study captured a small sample size because it was limited to the participants of a symposium, again limiting the generalizability of the perceptions. And lastly, by nature of design, our study highlights the perceptions of community members but

recognizes that their opinions and claimed experiences are subject to recall bias and cannot be verified.

**CONCLUSION**

The participants in our study identified shortcomings in the Nigerian emergency care system. Participants were able to outline challenges and opportunities characterizing prehospital care delivery, hospital care delivery, and health system governance. Themes also emerged to describe the components of the emergency care system as rudimentary, vulnerable and disconnected respectively. The results of this study may help healthcare professionals, policymakers, and community leaders identify gaps in the emergency care system and offer solutions in harmony with the needs, values and expectations of the community. If successful, these community-informed interventions may serve as a model to improve emergency care systems throughout Africa.

**SUPPORTING DOCUMENTS**

- Supplement 1 Focus group discussion Interview guide
- Supplement 2 SRQR Checklist

**FUNDING**

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**DATA AVAILABILITY STATEMENT**

All data relevant to the study are included in the article or uploaded as supplementary information.

## CONFLICTS OF INTEREST

All authors have no conflicts of interest to disclose

## AUTHOR CONTRIBUTIONS

*Conception and design of the study:* All authors

*Acquisition, analysis and interpretation of data:* AU, B Aiwonodagbon, B Akodu, AO

*Drafting the manuscript:* AU, AO

*Critical revisions to manuscript for intellectual content:* AU, JS, SK

*Supervision and final approval of manuscript version for publication:* BA, AO

AU and AO take responsibility for the manuscript as a whole.

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**Focus Group Facilitator Script – Emergency Medicine Symposium**  
**Lagos University Teaching Hospital**  
**Saturday, February 29, 2020**

**Facilitator:** Good morning / afternoon everyone. I want to first introduce myself and my assistant. We are facilitating a focus group discussion on the topic of Nigeria's current emergency care system. Before moving forward, I want to make sure that you are all aware that your participation in this focus group is VOLUNTARY. By no means is it compulsory. And at any time, you are free to leave, although I hope you will stay to complete the focus group in its entirety. Please state a verbal "YES" indicating your consent to participate in this focus group discussion.

**Participants:** YES

**Section 1**

**Q1:** I'd like to start the discussion by asking, what is a medical emergency?

**Facilitator:** Thank you for your ideas. A medical emergency is any life-threatening condition requiring rapid, immediate care. And according to the World Health Organization, an **emergency care system** is a health system that can effectively manages emergencies, such as acute illnesses and injuries and essentially save lives.

**Q2:** What are your thoughts about Nigeria's emergency care system?

**Q3:** By a show of hands, how many of you have witnessed an emergency in the past? Ok, so \_\_\_ out of \_\_\_.

**Q4:** How many of you have witnessed more than 3? Ok, so \_\_\_ out of \_\_\_.

**Q5:** By a show of hands – who would help someone during an emergency? Ok so \_\_\_ out of \_\_\_ would help someone during a medical emergency.

**Q6:** By a show of hands – who has helped someone during an emergency? Ok so \_\_\_ out of \_\_\_ have helped someone during an emergency.

**Q6 Follow Up:** Did you feel comfortable or prepared helping someone during an emergency? Please elaborate

**Q7:** Why would you help, or why would you not help, someone having an emergency?

**Q8:** If you said that you have or would help during an emergency – how would you help?

**Q9:** What do you think could make you and other people more likely to help?

**Q10:** Would anyone like to tell me about any emergencies that you have witnessed or experienced in the past (emergency examples include breathing problems, chest pain, trauma, birth complications). Elaborate, if you can, on how the emergencies were managed. What was done well. And what was not done well.

**Q10 Elaboration / Follow-Up Probes:**

☐ What type of medical emergency was it?

- ☐ Was someone at the incident able to assist? Who? (Policeman, layperson?)
- ☐ If there was someone at the incident to assist, what did that person do to help?
- ☐ Did you/the casualty need transport to a health facility for emergency care?
- ☐ How long did you/the casualty wait for transport? What transport was available?
- ☐ How long did it take to reach the facility?
- ☐ Did you encounter any challenges when trying to obtain emergency care?

*Allow as many people volunteer to describe their medical emergency, and probe only with the above points if they have not already covered them. After each person's sharing make sure to thank them and acknowledge that their contribution is very valuable though it may be tragic or emotional.*

**Facilitator:** Thank you all for sharing your experiences so far. The types of emergencies you have mentioned include .... (list a summary of what they have shared burns, motor vehicle accidents.....)

**Section 2**

**Q11:** Tell me about pre-hospital care (for instance ambulance, EMS, disaster preparedness) in Nigeria.

**Q12:** Tell me about the hospitals / health facilities in Nigeria

**Q13:** What are the barriers or challenges that you encounter when you are trying to access emergency care?

**Q13 Elaboration / Follow-Up Probes:**

- ☐ Where do you seek care for a medical emergency?
- ☐ Do you encounter any significant delays when trying to receive care for a medical emergency? What are they?
- ☐ How available is emergency care at your facility?

**Q14:** What are the factors that make it easier for you to access emergency care?

**Q15:** Thinking back to your experiences, what factors have made it easier to access emergency care?

**Q16:** What changes could you recommend to improve access to emergency care?

**Q17:** If you had the choice, where would you choose to seek care for an emergency (for instance, in Nigeria or abroad? Private versus Federal hospitals?)

**Section 3**

**Q18:** Is there anything else that anyone would like to add that we have not already discussed? Or that they would like to elaborate on from what we've previously discussed?

**Facilitator:** Thank you so much for coming and sharing your experiences, thoughts, and opinions with us. Some of the experiences you have described involved death and tragedy.

You have provided us with valuable information that will be used to improve the emergency care system of Nigeria.

For peer review only

Table 2 Thematic Categories and Supportive Quotes

Overarching Theme	Subtheme Categories	Representative Quotes from Focus Group Participants
Rudimentary	Emergency Recognition and Response	<p>“Patient’s die because, [even if] we can provide help to the person, we don’t have the means to help.”</p> <p>“Everybody should know how to do CPR so when somebody drops dead, they don’t start pouring water and start screaming around, which is what we do, They start running around and forcing water down the person’s mouth.”</p>
	Ambulance and Frontline Providers	<p>“There is no guarantee that first responders will get there on time, or that the person is going to get the desired help, or that they would get to the hospital on time. There is no guarantee that there won’t be traffic. Like all the odds are stacked against you., so you rather not bother.”</p> <p>“The police will stop the ambulance asking them where they are going, even with a patient on board.”</p>
	Cultural Considerations	<p>“For instance, you want to do CPR for someone and [it] requires you to touch the person. You will not have the time to start explaining what you want to do; and if you go ahead, you may not even leave there alive!”</p> <p>“Helping people in emergency situations, one can be tagged as a culprit. If I see someone on the road who requires emergency care and I stop to help, maybe put the person in my car. If anything happens to the person and I’m stopped by FRSC [Federal Road Safety Corps], they always tend to assume the Good Samaritan is the culprit.”</p>
	Healthcare Workforce	<p>“In the hospital, you could see somebody passing coca cola urine right there sitting on the floor; you see another person convulsing still on the floor; then you look and there is just only one nurse trying to take care of a gamot of patients.”</p> <p>“There’s a kind of brain drain. Everybody is no longer motivated as before. People are like - what am I doing here? After all my mates or colleagues [abroad], they are out there getting well paid and seeing results and they can work happily. They are in a better environment. But you are here just stressed out. You can’t even help the patient as you have loved to. There are so many, you</p>

<b>Vulnerability</b>		know; they just get demotivated.”
	Clinical Competency	<p>“I was not well equipped in terms of training so I had to train myself in ACLS, BLS, and ATLS and that gave me more confidence.”</p> <p>“A patient with GCS 3, some of our colleagues actually transfer these patients with no airway or IV access and this reduces the chances of survival for the patient.”</p>
	Hospital Capacity	<p>“You can’t do investigations in emergencies. You need the results of your investigations in minutes. When you send an investigation the person comes back to say it will be ready the following day. Or even the next week.”</p> <p>“It was my first clinical exposure ever...The doctor on call had a patient but there was no bed space; there were no gloves. He told us to go anywhere to get gloves. It was a head injury and the man’s head was practically held together by bandages getting soaked and there were no gloves in the whole A&amp;E. We practically watched the patient die because there were no gloves anywhere.”</p> <p>“I picked up a patient in an ambulance. It was a case of head injury. I took him to [hospital 1]; there was no bed space. He was bleeding from all orifices. It was terrible and all efforts to arrest the bleeding proved abortive. They referred to [hospital 2]. I got to [hospital 2]; no bed space. So they said we should go to spill over. Patient had nothing on him - no phone, no relatives. In spillover, you must pay money, so I called my boss. He said to take him to the [hospital 3]. I got there and they say they cannot be managed; I was referred to [hospital 4]. On our way to [hospital 4], the patient expired.”</p>

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	Financial Considerations of Emergency Care	<p>“Most times money is a hindrance because most emergency [departments] wouldn’t or may not attend to you if you don’t have money on you, without a proof that you are going to pay.”</p> <p>“Sometimes we need adrenaline. We need to resuscitate the patient. We don’t have it in our crash cart. Then we need the patient to get it. Before the patient will get it, it’s more than 30 minutes and the patient is already dead.”</p>
Disconnected	Healthcare Access	<p>“It shouldn’t be on us to be doing this, it should be on the government; the government should do this. So whatever we will talk about today, it should be focused on getting the government to work on this, so that all the burdens stacked against us will be taken away.”</p> <p>“In Nigeria, we don’t have a problem with drafting down laws, our problem is in enforcing those laws. And unfortunately, those that have been charged with doing that are our problem. So, someone has to police the police.”</p> <p>“Most of these patients are already there [at the church or mosque] where they are praying for them. And when they are almost dying, they come to the hospital.”</p>
	Healthcare Financing	<p>“To be very honest, if you bring money, you can easily be admitted in a private ward and you get everything you need.”</p> <p>“I personally believe that every single Nigerian is just one major health crisis from being in abject poverty, which means that we are all, like, at risk technically.”</p>

# Standards for Reporting Qualitative Research (SRQR)\*

<http://www.equator-network.org/reporting-guidelines/srqr/>

Page/line no(s).

## Title and abstract

<b>Title</b> - Concise description of the nature and topic of the study Identifying the study as qualitative or indicating the approach (e.g., ethnography, grounded theory) or data collection methods (e.g., interview, focus group) is recommended	1
<b>Abstract</b> - Summary of key elements of the study using the abstract format of the intended publication; typically includes background, purpose, methods, results, and conclusions	2 – 3

## Introduction

<b>Problem formulation</b> - Description and significance of the problem/phenomenon studied; review of relevant theory and empirical work; problem statement	4 – 5
<b>Purpose or research question</b> - Purpose of the study and specific objectives or questions	4 – 5

## Methods

<b>Qualitative approach and research paradigm</b> - Qualitative approach (e.g., ethnography, grounded theory, case study, phenomenology, narrative research) and guiding theory if appropriate; identifying the research paradigm (e.g., postpositivist, constructivist/ interpretivist) is also recommended; rationale**	6
<b>Researcher characteristics and reflexivity</b> - Researchers' characteristics that may influence the research, including personal attributes, qualifications/experience, relationship with participants, assumptions, and/or presuppositions; potential or actual interaction between researchers' characteristics and the research questions, approach, methods, results, and/or transferability	6
<b>Context</b> - Setting/site and salient contextual factors; rationale**	6
<b>Sampling strategy</b> - How and why research participants, documents, or events were selected; criteria for deciding when no further sampling was necessary (e.g., sampling saturation); rationale**	7
<b>Ethical issues pertaining to human subjects</b> - Documentation of approval by an appropriate ethics review board and participant consent, or explanation for lack thereof; other confidentiality and data security issues	9
<b>Data collection methods</b> - Types of data collected; details of data collection procedures including (as appropriate) start and stop dates of data collection and analysis, iterative process, triangulation of sources/methods, and modification of procedures in response to evolving study findings; rationale**	8

<b>Data collection instruments and technologies</b> - Description of instruments (e.g., interview guides, questionnaires) and devices (e.g., audio recorders) used for data collection; if/how the instrument(s) changed over the course of the study	8
<b>Units of study</b> - Number and relevant characteristics of participants, documents, or events included in the study; level of participation (could be reported in results)	7
<b>Data processing</b> - Methods for processing data prior to and during analysis, including transcription, data entry, data management and security, verification of data integrity, data coding, and anonymization/de-identification of excerpts	8
<b>Data analysis</b> - Process by which inferences, themes, etc., were identified and developed, including the researchers involved in data analysis; usually references a specific paradigm or approach; rationale**	9
<b>Techniques to enhance trustworthiness</b> - Techniques to enhance trustworthiness and credibility of data analysis (e.g., member checking, audit trail, triangulation); rationale**	9

## Results/findings

<b>Synthesis and interpretation</b> - Main findings (e.g., interpretations, inferences, and themes); might include development of a theory or model, or integration with prior research or theory	9 – 20
<b>Links to empirical data</b> - Evidence (e.g., quotes, field notes, text excerpts, photographs) to substantiate analytic findings	10 – 12

## Discussion

<b>Integration with prior work, implications, transferability, and contribution(s) to the field</b> - Short summary of main findings; explanation of how findings and conclusions connect to, support, elaborate on, or challenge conclusions of earlier scholarship; discussion of scope of application/generalizability; identification of unique contribution(s) to scholarship in a discipline or field	20 – 23
<b>Limitations</b> - Trustworthiness and limitations of findings	23

## Other

<b>Conflicts of interest</b> - Potential sources of influence or perceived influence on study conduct and conclusions; how these were managed	25
<b>Funding</b> - Sources of funding and other support; role of funders in data collection, interpretation, and reporting	24

\*The authors created the SRQR by searching the literature to identify guidelines, reporting standards, and critical appraisal criteria for qualitative research; reviewing the reference lists of retrieved sources; and contacting experts to gain feedback. The SRQR aims to improve the transparency of all aspects of qualitative research by providing clear standards for reporting qualitative research.

\*\*The rationale should briefly discuss the justification for choosing that theory, approach, method, or technique rather than other options available, the assumptions and limitations implicit in those choices, and how those choices influence study conclusions and transferability. As appropriate, the rationale for several items might be discussed together.

**Reference:**

O'Brien BC, Harris IB, Beckman TJ, Reed DA, Cook DA. **Standards for reporting qualitative research: a synthesis of recommendations.** *Academic Medicine*, Vol. 89, No. 9 / Sept 2014  
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# BMJ Open

## Perspectives on the current state of Nigeria's emergency care system among participants of an Emergency Medicine symposium: a qualitative appraisal

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Perspectives on the current state of Nigeria's emergency care system among participants of an  
Emergency Medicine symposium: a qualitative appraisal

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Key Words: Qualitative research; Emergency medical services; Emergencies; Nigeria; Low and middle income country

**Abstract**

**Introduction:** Emergency care systems provide timely and relevant care to the acutely ill and injured. Published commentaries have characterized deficiencies in the Nigerian emergency care system and offered potential solutions but have not included the perspectives of the Nigerian public. A more inclusive approach that includes feedback from the public may help improve the Nigerian emergency care system through better understanding of the needs, values, and expectations of the community.

**Methods:** Participants of an emergency medicine symposium participated in focus group discussions that were randomly divided into small groups led by two trained facilitators. These facilitators asked open-ended, semi-structured questions to lead discussions in the English language. Participant responses were audio-recorded and transcribed verbatim into transcripts. Two independent investigators employed conventional content analysis to code the transcripts until thematic saturation was achieved.

**Results:** Three descriptive themes emerged characterizing the current state of Nigeria’s emergency care system as it relates to prehospital care delivery, hospital care delivery and health system governance: rudimentary, vulnerable, and disconnected. At the prehospital level, concepts revolved around emergency recognition and response, ambulance and frontline providers, and cultural norms. At the hospital level, concepts centered around the health

workforce, clinical competency, hospital capacity and the burden of financial hardship. At the health system level, concepts concentrated on healthcare access and healthcare financing.

Opportunities for emergency care system improvement at each component level were identified and explored.

**Conclusions:** The participants in this study identified shortcomings and opportunities to improve prehospital care, hospital care, and health system governance. The results of this study may help healthcare professionals, policymakers, and community leaders identify gaps in the emergency care system and offer solutions in harmony with the needs, values and expectations of the community. If successful, these community-informed interventions may serve as a model to improve emergency care systems throughout Africa.

**Word Count:** 300

**Key Words:** Qualitative research; Emergency medical services; Emergencies; Nigeria; Low and middle income country

### **Strengths and Limitations of this study**

- This qualitative study elicits feedback from the Nigerian community regarding their emergency care needs.
- This study utilized a collaborative approach with local Nigerian research partners.
- While our findings are robust, they should be interpreted in the context of the focus group participants.

**INTRODUCTION**

On the 28<sup>th</sup> of May 2019, the Seventy-second World Health Assembly unanimously passed a resolution recognizing the essential role emergency care systems play in preventing death and disability from acute illness and injury[1]. Many low-and-middle income countries (LMICs) recognize the essential role of emergency care systems but are challenged in their pursuit of developing their emergency care system because they have traditionally prioritized resources on infectious diseases and maternal and child health[2, 3]. Universal health coverage, which ensures access to quality and effective health services without the burden of financial hardship, should be a priority objective for LMICs while developing their respective emergency care systems [4].

Nigeria's health system has struggled to meet the needs of an ever-growing population despite economic advances that have increased the annual gross domestic product (GDP) per capita from \$568 in 2000 to \$2,230 in 2019. [5, 6]. When compared globally, Nigeria is ranked 142nd out of 195 countries when evaluating its performance on a comparative healthcare access and quality index[7]. Further, Nigeria frequently loses its trained healthcare providers to other countries suffering from one of the highest brain drains globally[8]. Nigeria's ability to deliver accessible quality medical care is limited by its current healthcare infrastructure. Health facilities are poorly resourced and understaffed, especially in rural areas[9]. Despite having the largest economy in Africa, Nigeria has 0.5 hospital beds per 1000 people, which falls below the average of 1.0 hospital bed per 1000 people in other Sub-Saharan African countries[9, 10]. Moreover, there are only 47 tertiary hospitals – a mix of public, private, and faith-based institutions – in the country with a population of over 200 million people[11].

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3 It is estimated that over half of all deaths in LMICs can be averted by effective emergency care  
4 delivery[12]. In Nigeria, that would translate to approximately 1,000,000 lives saved every year,  
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6 or 3,000 lives every day[13,14]. Like in most LMICs, Nigerian emergency departments are run  
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8 by providers with little to no dedicated specialty training in emergency care as there are no  
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10 recognized post graduate training programs in Emergency Medicine[15, 16]. It is estimated that,  
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12 of the 1.6 million deaths recorded annually in Nigeria, 10-15% occur in emergency  
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14 departments[17]. Lagos is one of the few states in Nigeria with a public ambulance transporting  
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16 system, but many of these ambulances are non-functional[18]. And for those that are, the ability  
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18 of these ambulances to get to the scene is difficult with the current road traffic system[19].  
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20 Commentaries published by healthcare professionals have characterized deficiencies in the  
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22 Nigerian emergency care system and offered potential solutions[20-22]. However, these  
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24 commentaries have not included the perspectives of the Nigerian public. A more inclusive  
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26 approach that includes feedback from the public may help policymakers improve the Nigerian  
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28 emergency care system through better understanding of the needs, values, and expectations of  
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30 the community.  
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40 We sought to identify the public's perceptions of Nigeria's emergency care system at an  
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42 emergency medicine symposium in Lagos, Nigeria, on the 28<sup>th</sup> of March, 2020. Members of the  
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44 local community - both health professionals and laypeople - gathered to share perspectives on  
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46 strengthening the Nigerian emergency care system and ultimately saving lives. We facilitated  
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48 discussions with symposium participants to better understand their impression of Nigeria's  
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50 emergency care system – including the current state of healthcare delivery, challenges to seeking  
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and providing timely emergency care, and opportunities for improving upon the emergency care system so that it meets the needs of the populace.

**METHODS**

**Study Design**

Focus groups are recognized as ideal avenues for investigating complex and unique concepts, particularly when they are dependent on obscure factors or determinants[23, 24]. We invited participants in an emergency medicine symposium - an ideal setting to gather members of the public with insight and interest - to participate in focus group discussions centered on perceptions of the emergency care system in Nigeria. The symposium was hosted by WeBelieve Health, a non-profit organization, in Lagos, Nigeria. The mission of WeBelieve Health is to increase access to quality care for Nigerians and to facilitate knowledge sharing to improve healthcare delivery [25]. The objective of the symposium was to outline the current state of emergency medicine in Nigeria and to brainstorm strategies to improve emergency care delivery in the country. The researchers of this study are not directly affiliated with WeBelieve Health but instead collaborated with the non-profit organization. The researchers all conduct research in global health, and they are composed of emergency medicine physicians, a family medicine physician and a public health physician.

**Patient Involvement**

There was no patient involvement in the design, conduct, reporting, or dissemination plans of our research.

## Recruitment of Participants

Participants were made aware of our intention to conduct focus group discussions at the commencement of the symposium. Participation was voluntary and without restriction or incentive. A total of 66 symposium attendees, 43% of the total 152 symposium registrants, agreed to participate. Fifty-two participants were healthcare professionals, which included medical officers, surgeons, nurses, and medics, and fourteen were non-healthcare professionals, which included reporters, business professionals and policy makers[Table 1]. In order to ensure a random grouping of healthcare and non-healthcare participants were divided by convenience sampling by numbering off 1-7 to form groups of 8-11 people.

Table 1 Demographic data of discussion group participants

		<b>Number of Participants (n=66)</b>	<b>Percentage</b>
Sex	Male	33	50.0%
	Female	33	50.0%
Occupation	Physician	29	43.9%
	Nurse	3	4.5%
	Medic	19	28.8%
	Medical Student	1	1.5%
	Non-Healthcare Professionals	14	21.2%

**Data Collection and Management**

We collaborated with the Department of Community Health and Primary Care at the University of Lagos College of Medicine (LUTH) to facilitate the seven focus group discussions.

Facilitators from LUTH were only involved with data collection but not data management or analysis. Each group was led by two facilitators; one facilitator served as the moderator and the other facilitator served as the assistant. Moderators were experienced in qualitative data analysis and conducting focus groups. Assistants were community volunteers and were provided same day training on the principles and processes of qualitative data collection and management. Each facilitator was fluent in English and pidgin English. The focus groups were conducted in English language.

Small group facilitators obtained verbal consent from each participant at the beginning of each focus group discussion. Facilitators utilized open-ended, semi-structured questions pre-developed and included in an interview guide adopted from focus group scripts utilized in a Zambian pilot study[26] [Supplement 1]. The script was designed to capture participant opinions specifically about emergency care making it an excellent template to use, with adaptation, in our study. The focus groups were audio recorded with a digital voice recorder and transcribed verbatim in English by the facilitator assistant into Microsoft Word 13, version 15.0. NVivo version 12, a computer-assisted qualitative data analysis software, was utilized to facilitate data management and organization.

## Data Analysis

Utilizing a team-based approach, we employed conventional content analysis to apply codes that emerged directly from the narrative data. Two research members, also referred to as investigators, coded independently by carefully exploring each transcript to ensure recognition of the most salient codes and patterns. The investigators then compared their applied codes and categorized the emerging codes into overarching themes using in-vivo descriptors embedded directly in the text. Shared decision making continued until group consensus was achieved. The investigators also conducted quality assessments of the results with the SRQR checklist[27, Supplement 2].

## Ethics

The Institutional Review Board (IRB) at the Lagos University Teaching Hospital and at Beth Israel Deaconess Medical Center provided ethical approval for this study.

## RESULTS

The interview guide was developed to explore the participants' experiences and interactions with the emergency care system at the prehospital setting, the hospital setting and at the health system level. Participants further characterized their perceived challenges at each of these sectors as it relates to pre-hospital care delivery, hospital care delivery, and health system governance. Challenges were classified by descriptive themes according to the most commonly used terms by the focus group participants. The descriptive themes were rudimentary, vulnerable and disconnected[Table 2].

Table 2 Thematic Categories and Supportive Quotes

Overarching Theme	Subtheme Categories	Representative Quotes from Focus Group Participants
Rudimentary	Emergency Recognition and Response	<p>“Patients die because, [even if] we can provide help to the person, we don’t have the means to help.” Participant 1, FG 1</p> <p>“Everybody should know how to do CPR so when somebody drops dead, they don’t start pouring water and start screaming around, which is what we do, They start running around and forcing water down the person’s mouth.” Participant 5, FG 3</p>
	Ambulance and Frontline Providers	<p>“There is no guarantee that first responders will get there on time, or that the person is going to get the desired help, or that they would get to the hospital on time. There is no guarantee that there won’t be traffic. Like all the odds are stacked against you., so you rather not bother.” Participant 9, FG 3</p> <p>“The police will stop the ambulance asking them where they are going, even with a patient on board.” Participant 8, FG 3</p>
	Cultural Considerations	<p>“For instance, you want to do CPR for someone and [it] requires you to touch the person. You will not have the time to start explaining what you want to do; and if you go ahead, you may not even leave there alive!” Participant 8, FG 1</p> <p>“Helping people in emergency situations, one can be tagged as a culprit. If I see someone on the road who requires emergency care and I stop to help, maybe put the person in my car. If anything happens to the person and I’m stopped by FRSC [Federal Road Safety Corps], they always tend to assume the Good Samaritan is the culprit.” Participant 7, FG 5</p>

	Healthcare Workforce	<p>“In the hospital, you could see somebody passing coca cola urine right there sitting on the floor; you see another person convulsing still on the floor; then you look and there is just only one nurse trying to take care of a gamot of patients.” Participant 10, FG 4</p> <p>“There’s a kind of brain drain. Everybody is no longer motivated as before. People are like - what am I doing here? After all my mates or colleagues [abroad], they are out there getting well paid and seeing results and they can work happily. They are in a better environment. But you are here just stressed out. You can’t even help the patient as you have loved to. There are so many, you know; they just get demotivated.” Participant 7, FG 4</p>
<b>Vulnerability</b>	Clinical Competency	<p>“I was not well equipped in terms of training so I had to train myself in ACLS, BLS, and ATLS and that gave me more confidence.” Participant 10, FG 4</p> <p>“A patient with GCS 3, some of our colleagues actually transfer these patients with no airway or IV access and this reduces the chances of survival for the patient.” Participant 2, FG 5</p>
	Hospital Capacity	<p>“You can’t do investigations in emergencies. You need the results of your investigations in minutes. When you send an investigation the person comes back to say it will be ready the following day. Or even the next week.” Participant 1, FG 6</p> <p>“It was my first clinical exposure ever...The doctor on call had a patient but there was no bed space; there were no gloves. He told us to go anywhere to get gloves. It was a head injury and the man’s head was practically held together by bandages getting soaked and there were no gloves in the whole A&amp;E. We practically watched the</p>

		<p>patient die because there were no gloves anywhere.” Participant 8, FG 6</p> <p>“I picked up a patient in an ambulance. It was a case of head injury. I took him to [hospital 1]; there was no bed space. He was bleeding from all orifices. It was terrible and all efforts to arrest the bleeding proved abortive. They referred to [hospital 2]. I got to [hospital 2]; no bed space. So they said we should go to spill over. Patient had nothing on him - no phone, no relatives. In spillover, you must pay money, so I called my boss. He said to take him to the [hospital 3]. I got there and they say they cannot be managed; I was referred to [hospital 4]. On our way to [hospital 4], the patient expired.” Participant 3, FG 6</p>
	Financial Considerations of Emergency Care	<p>“Most times money is a hindrance because most emergency [departments] wouldn’t or may not attend to you if you don’t have money on you, without a proof that you are going to pay.” Participant 1, FG 3</p> <p>“Sometimes we need adrenaline. We need to resuscitate the patient. We don’t have it in our crash cart. Then we need the patient to get it. Before the patient will get it, it’s more than 30 minutes and the patient is already dead.” Participant 2, FG 5</p>
Disconnected	Healthcare Access	<p>“It shouldn’t be on us to be doing this, it should be on the government; the government should do this. So whatever we will talk about today, it should be focused on getting the government to work on this, so that all the burdens stacked against us will be taken away.” Participant 3, FG 3</p> <p>“In Nigeria, we don’t have a problem with drafting down laws, our</p>

		<p>problem is in enforcing those laws. And unfortunately, those that have been charged with doing that are our problem. So, someone has to police the police.” Participant 5, FG 3</p> <p>“Most of these patients are already there [at the church or mosque] where they are praying for them. And when they are almost dying, they come to the hospital.” Participant 10, FG 4</p>
	Healthcare Financing	<p>“To be very honest, if you bring money, you can easily be admitted in a private ward and you get everything you need.” Participant 8, FG 6</p> <p>“I personally believe that every single Nigerian is just one major health crisis from being in abject poverty, which means that we are all, like, at risk technically.” Participant 8, FG 6</p>

### Pre-Hospital Care Delivery

Participants acknowledged that emergencies are very common but that poor conditions and the absence of first aid supplies leads them to consider the prehospital system as rudimentary, *which* was a repeated descriptor for the undeveloped, or as participant 1 of focus group (FG) 1 and participant 6 of FG 5 stated “nonexistent,” infrastructure currently in place to deliver care to patients at the scene of injury or illness. It also represented the community’s understanding of basic life support interventions such as performing cardiopulmonary resuscitation (CPR). An overall impression was that effective and prioritized interventions in prehospital care delivery would result in the biggest impact to Nigeria’s emergency care system.

Emergency Recognition and Response

The first step in emergency response is recognizing the emergency. Participants generally defined an emergency as any condition that, if not provided urgent attention, will result in loss of life or long-lasting disability. Nearly all of the participants verbalized that they had personally witnessed an emergency, with many having witnessed an emergency on at least three separate occasions[Table 3]. Although many stated that they are willing to help a victim in need of emergency care, they lack training in providing basic life support, and the first aid equipment needed to facilitate care delivery is not readily available. Participant 6 from FG 6 mentioned a time when he witnessed a woman being hit by an okada (*okada is a common motorcycle taxi in Nigeria*). He didn't offer help because he did not have a first aid kit, and therefore he did not feel empowered to provide care without medical supplies. For this reason, the participant mentioned that the majority of patients receive initial care by family members or bystanders who lack formal training.

Table 3 Types of emergencies most commonly referenced

Trauma	Falls
	Road traffic accidents
	Mass casualty incidents
Medical	Asthma
	Malaria
	Stroke
	Perforated peptic ulcer

Ambulances and Frontline Providers

There were disagreements related to the presence of a universal access number that individuals can call to report and request emergency help. Multiple numbers were identified as the universal

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3 emergency access number in Nigeria: 199, 112 and 122. 122 was the most recognized number  
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5 although many discussed that it was unreliable. If successful in reaching an operator to dispatch  
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7 emergency personnel, the next challenge is having the ambulance reach the patient in a timely  
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9 manner. Many participants attributed delay in first responder arrival to poor roads and excessive  
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11 traffic. Also reported as contributing to delayed ambulance arrival to the scene is that  
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14 ambulances are generally not granted the right-of-way when traveling. Many of the medics  
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16 reported an average of 1-2 hours to get to the scene of injury or illness, irrespective of where you  
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18 live, and then an additional 1-2 hours to get to the nearest hospital. The result is that the vast  
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20 majority of patients arrive at a healthcare facility by private vehicle, taxi service, public transit or  
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22 by foot. Participant 1 from FG 4 recalled an incident when a pregnant woman was seen in a  
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24 clinic and noted to have an elevated blood pressure. She was sent by public transportation to go  
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26 to the hospital. Formal transportation was not arranged, and she had a seizure on the bus and died  
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28 shortly thereafter, before reaching the hospital. Even when an ambulance does arrive at the  
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30 scene, there is no standardized approach to the care of injured or ill patients. Medics are  
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32 prehospital personnel who transport patients by ambulance to clinics or hospitals. Medics who  
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34 were present discussed their experience with feeling unsafe transferring patients, particularly  
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36 trauma patients, who require well-coordinated patient handling to prevent cervical spine injury.  
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#### 45 Cultural Considerations

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47 Many participants, primarily healthcare providers, described their fear of retribution for  
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49 delivering care outside of the hospital environment due to weak Good Samaritan protections.  
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51 One physician, participant 8 of FG 4, recounted an experience of his colleague who was jailed  
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53 for providing care to a patient and then transporting the patient in her private vehicle to the  
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hospital. The patient ultimately succumbed to his injuries upon arrival to the hospital, and the physician was arrested by the police while they investigated the cause of injury. Other healthcare providers echoed this experience providing their own stories of similar circumstances where either themselves or colleagues were subject to harassment for simply providing prehospital care. Participant 6 of FG 1 recalled an incident where a man in a rural part of Nigeria was performing CPR on a female who suddenly collapsed. The neighbors reported the man to the girl's father as trying to kiss and fondle the girl instead of trying to save her life.

**Hospital Care Delivery**

Participants discussed hospital care delivery with *vulnerability* being a recurrent theme related to the workforce, clinical competency and hospital capacity. Many healthcare workers reflected on their sense of helplessness when caring for the ill and injured, while many laypersons dwelled on their fears of becoming ill or injured and being cared for in the current emergency care system. When surveyed on whether they would seek care in Nigeria versus abroad if they had the option, the vast majority answered abroad.

**Health Workforce**

Healthcare workers in the groups shared clinical experiences with cases where alternative or less invasive interventions were not considered because of the lack of qualified personnel. An orthopedic surgeon, participant 7 of FG 3, recalled a patient who presented to the hospital after he was run over by a truck and suffered a crush injury to the leg. Because of the delay presenting to the hospital and the extent of injury to the leg, the decision was made to amputate and he was a part of the operative team. He discussed his regret that, had there been a qualified surgeon with

the capabilities of vascular and small nerve reconstruction, that the man's leg could have been saved.

Healthcare participants who worked in rural settings discussed their frustrations with the inequitable distribution of the healthcare workforce, stating that it is generally concentrated in major cities such as Lagos, Ibadan and Abuja. Many voiced that they felt overwhelmed and described many symptoms of burn out. Identified contributions to clinical exhaustion were poor training, inadequate skills acquisition, high patient-to-provider ratios, lack of security and insufficient administrative support. Many stories were told of incidents when patients and their families physically assaulted physicians because they disagree with their recommendations, are annoyed with long waiting times, or are frustrated with care delivery. As participant 7 of FG 4 put it, morale and motivation is lacking.

### Clinical Competency

Many healthcare participants admitted to inadequate training in triage. Participant 6 of FG 6 shared an incident when a patient was found to be aggressive. To address this patient's aggression, they administered diazepam, which works as a sedative. When this did not work, they administered chlorpromazine, which is an antipsychotic. Once the patient calmed down, they searched her phone and called many contacts. Eventually they reached her sister, who informed the team that the patient was diabetic. Only then did the team check her blood sugar revealing that it was dangerously low. With this new information, they began resuscitation with blood glucose and she eventually recovered, but the delay in glucose administration could have resulted in irreversible brain damage and even death.

Hospital Capacity

Participants 7 and 11 of FG 2, who work in an emergency department, spoke about the difficulty of accepting patients due to the space limitations. For this reason, many patients are refused entry and referred to other hospitals. A general sentiment though among participants was that if you are privileged and know the right people, you can get around limited hospital capacity. As participant 2 of FG 4 shared, he had a relative who needed oxygen, but when they arrived at the hospital, there was no space. Fortunately, they knew the Governor and called him. Moments later, the participant’s relative was admitted.

An additional limitation to care delivery, as noted by participants, is the availability of medical equipment and supplies. Many scrutinized the baseline scarcity of basic personal protective equipment like gloves. Participant 5 of FG 6 mentioned that staff are encouraged to reuse gloves while at work and that if a patient wants the staff to change their gloves when caring for them, then the patient themselves would need to buy and supply the hospital staff with gloves. Participant 1 of FG 5 uses aprons or bed sheet linens to cover his hands in place of gloves. Further impediments related to laboratory and radiologic investigations also delay care. Healthcare providers mentioned that it may take days to get lab results back. Others discussed the difficulty obtaining radiographic studies such as x-rays, computed tomography (CT) scans, and magnetic resonance imaging (MRI).

Financial Considerations of Emergency Care

Participant 6 of FG 6 shared an intimate story of her relative who was in respiratory distress. They took him to three hospitals before he was accepted and provided with oxygen. But by this

time, it was too late and he eventually died. He was turned away from the two nearest private hospitals because of the inability to pay. Participant 9 of FG 3 discussed the dichotomy experienced amongst Nigerians based on socioeconomic status. One woman, she recalled, had a minor motor vehicle accident but because of her financial status, she was immediately taken to the nearest hospital, admitted within minutes, and tended to by various medical and surgical specialties. On the other hand, another man, involved in a traffic accident, arrived at the hospital unconscious, and care was delayed because he did not have money. After many calls to his family to secure funding, he was eventually cared for but unfortunately succumbed to his injuries. Participant 4 of FG 6 recalled an emotional story of a young child who fell on an iron rod which burned her abdominal wall to the point of exposing her viscera. She needed surgery but the family did not have the funds. The patient was admitted but waited many days until the medical students could raise funds to cover the procedure.

### Health System Governance

Nigeria's healthcare system is "still in the pipeline" as participant 2 of FG 6 stated, resulting in *disconnected* coordination and collaboration amongst essential stakeholders, agencies and facilities relevant to emergency care delivery. The focus of health system challenges and solutions, among participants, centered on the functions of the central federal government and its responsibility in facilitating healthcare access and financing.

### Healthcare Access and Financing

Many participants voiced their frustration that various components of the health system function in silos rather than an integrated manner. An identified barrier to improvements in hospital care

is the bureaucratic environment within the federal government and that there does not seem to be a centralized office or agency coordinating healthcare delivery at the national level to ensure equitable access at the state and local level. Participants discussed the current National Health Insurance Scheme (NHIS), which was meant to serve as a solution and provide financial insurance for those seeking healthcare services[28]. An issue recognized by healthcare workers is that if a patient comes in with acute ailment, you have to first send a code to the NHIS before rendering care to receive pre approval for care rendered. And until you receive approval, all care provided prior to a notification from the NHIS is not covered, which as participant 6 of FG 6 stated, negates its utilization in emergency situations.

Many participants identified the unaffordable cost for medical care as the reason patients seek care with traditional or alternative healthcare providers. It is not until these remedies fail that many patients present to a clinic or hospital. For example, many patients cannot afford the cost of antiepileptic medications. Participant 5 of FG 3 described the common practice of burning the legs of a convulsing child. This practice is thought to rid the child of evil spirits causing the seizure. After this fails, the child is brought to a hospital, having now suffered complications of both seizures and burns. The overall impression of participants was that the aim of sustainable healthcare access and financing is to reduce and eventually eliminate health disparities, particularly those created by economic privilege.

**DISCUSSION**

The participants identified the *rudimentary* components of emergency response, prehospital infrastructure, and community knowledge deficit of basic life support. The group provided

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3 examples of the *vulnerabilities* intrinsic to hospital care delivery such as an inadequate health  
4 workforce, deficient clinical competency for managing the acutely ill and injured, poor hospital  
5 capacity and multiple instances of delayed care because of poverty. Additionally, the participants  
6 revealed the *disconnection* between policies aimed at ensuring healthcare access and financing  
7 and the actual experiences of Nigerians who seek health services. Strengthening the Nigerian  
8 emergency care system will require implementing community-informed interventions  
9 concerted at the prehospital, hospital and health systems levels.  
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21 At the prehospital level, the majority of participants reported being able to recognize an  
22 emergency but there remains a knowledge deficit on how to appropriately intervene during an  
23 emergency. One suggested strategy to augment emergency care delivery is to train laypersons on  
24 basic life support, which has proven successful in many LMICs, including in Sub-Saharan  
25 Africa[29, 30]. Moreover, participants alluded that policy leaders should prioritize strengthening  
26 Good Samaritan laws so that well intended bystanders are empowered to initiate basic life  
27 support and be protected while doing so[12].  
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40 The findings from our discussions suggest modernizing the prehospital infrastructure as well as  
41 the road traffic networks that integrate even the most remote communities[19]. Solutions have  
42 been identified and proposed that are applicable to the Nigerian context[31]. Local governments  
43 can start by investing in an adequate fleet of ambulances that are equipped with medical supplies,  
44 medications, oxygen, and reliable communication systems. Drivers of these ambulances are  
45 recommended to be trained in an accredited education system and evaluated for competency with  
46 didactic and clinical assessments. Ambulances should also be strategically located to reach  
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victims throughout a metropolitan region with centralized call centers in place to guide their response. Additionally, one national and universal emergency number should be recognized with toll-free calling accessible with all telecommunication services[32, 33].

Hospitals themselves face many challenges, as many Nigerians lack trust in available primary and secondary health facilities, bypassing them to seek care at even farther tertiary facilities[34]. Wen et al. report on lower than expected utilization of emergency departments within the Nigerian capital of Abuja despite similar location and layout of their emergency departments when compared to similar departments in the United States[35]. Focus group participants identified potential reasons being related to factors that are overwhelming the Nigerian workforce as well inadequate training in emergency care delivery. Strategic partnerships with established external organizations can help to build sustainable training programs in emergency medicine ensuring clinical competency in the recognition, management and definitive treatment of patients suffering from acute illness or injury and have been successful in similar settings[36]. Proper training in emergency and trauma resuscitation is essential to ensuring appropriate care delivery and improving patient outcomes and may encourage patients to appropriately utilize health services available to them locally[12, 33].

To improve access to care, participants mentioned categorizing health facilities based on their capabilities so that patients and prehospital providers can seek care at the most suitable facility, which may support the appropriate allocation of limited resources[12]. Another suggested approach involves partnering with religious and holistic entities to address social and cultural

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3 norms that deter individuals from seeking appropriate care in health facilities in a timely  
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5 manner[37].  
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10 Emergency care may involve extensive investigations to evaluate and diagnose high risk injuries  
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12 or illness which can be costly. But despite its costs, global consensus is that all people should  
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14 have access to emergent health services without the fear of financial hardship[4]. Some  
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16 countries, like the United States, have enacted policies that require emergency care to be  
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18 rendered irrespective of a patient's ability to pay[38]. Nigeria has similar policies requiring care  
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20 delivery regardless of one's ability to pay, but the policy does not translate to the experiences of  
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22 individuals who proclaim that financial capabilities are a factor in the care they receive[28]. This  
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24 was a recurrent concern amongst participants. The National Health Act (NHA) was enacted in  
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26 2014 with the goal of improving healthcare financing and expanding care access, including  
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28 emergency care, by establishing a Basic Health Care Provision Fund (BHCPF). The BHCPF  
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30 though was not actually included in the federal budget until 2018[39, 40].  
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38 According to the World Bank, of the \$74 per capita spent on health expenditures in Nigeria, 77%  
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40 is paid out-of-pocket[41, 42]. This is comparison to aggregate data revealing that globally only  
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42 18% of health expenditures are paid out-of-pocket[43]. A general sentiment amongst participants  
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44 was for more efforts to be taken to ensure that the BHCPF is providing citizens with access to  
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46 basic primary and emergency care as well as universal health coverage. Nigeria's ability to  
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48 successfully implement the promises of the NHA could catapult the nation to be on track with  
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50 international standards for healthcare access and quality.  
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**LIMITATIONS**

Study limitations should be considered. The focus groups were conducted amongst participants of an emergency medicine symposium and therefore captured individuals actively engaged or interested in emergency care service delivery, many of whom are healthcare providers, who have pre-existing knowledge and intimate experience with the healthcare system, which may have impacted the themes and concerns that they expressed in the focus groups. The participants also attended conference sessions prior to participating in the study, which may have biased their perceptions and influenced the discussions. The study captured a small sample size because it was limited to the participants of a symposium, and therefore the themes that emerged may be biased towards the cohort of individuals present. And lastly, by nature of design, our study highlights the perceptions of symposium participants but recognizes that their opinions and claimed experiences are subject to recall bias and cannot be verified.

**CONCLUSION**

The participants in our study identified shortcomings in the Nigerian emergency care system. Participants were able to outline challenges and opportunities characterizing prehospital care delivery, hospital care delivery, and health system governance. Themes also emerged to describe the components of the emergency care system as rudimentary, vulnerable and disconnected respectively. The results of this study may help healthcare professionals, policymakers, and community leaders identify gaps in the emergency care system and offer solutions in harmony with the needs, values and expectations of the community. If successful, these community-informed interventions may serve as a model to improve emergency care systems throughout Africa.

## SUPPORTING DOCUMENTS

Supplement 1 Focus group discussion Interview guide

Supplement 2 SRQR Checklist

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## DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available on request from the corresponding author, [AU], upon reasonable request. The data are not publicly available due to the data containing information that could compromise the privacy of research participants.

## CONFLICTS OF INTEREST

All authors have no conflicts of interest to disclose

## AUTHOR CONTRIBUTIONS

*Conception and design of the study:* All authors

*Acquisition, analysis and interpretation of data:* AU, B Aiwonodagbon, B Akodu, AO

*Drafting the manuscript:* AU, AO

*Critical revisions to manuscript for intellectual content:* AU, JS, SK

*Supervision and final approval of manuscript version for publication:* BA, AO

AU and AO take responsibility for the manuscript as a whole.

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**Focus Group Facilitator Script – Emergency Medicine Symposium**  
**Lagos University Teaching Hospital**  
**Saturday, February 29, 2020**

**Facilitator:** Good morning / afternoon everyone. I want to first introduce myself and my assistant. We are facilitating a focus group discussion on the topic of Nigeria’s current emergency care system. Before moving forward, I want to make sure that you are all aware that your participation in this focus group is VOLUNTARY. By no means is it compulsory. And at any time, you are free to leave, although I hope you will stay to complete the focus group in its entirety. Please state a verbal “YES” indicating your consent to participate in this focus group discussion.

**Participants:** YES

**Section 1**

**Q1:** I’d like to start the discussion by asking, what is a medical emergency?

**Facilitator:** Thank you for your ideas. A medical emergency is any life-threatening condition requiring rapid, immediate care. And according to the World Health Organization, an **emergency care system** is a health system that can effectively manages emergencies, such as acute illnesses and injuries and essentially save lives.

**Q2:** What are your thoughts about Nigeria’s emergency care system?

**Q3:** By a show of hands, how many of you have witnessed an emergency in the past? Ok, so\_\_\_ out of \_\_\_.

**Q4:** How many of you have witnessed more than 3? Ok, so\_\_\_ out of \_\_\_.

**Q5:** By a show of hands – who would help someone during an emergency? Ok so\_\_\_ out of \_\_\_ would help someone during a medical emergency.

**Q6:** By a show of hands – who has helped someone during an emergency? Ok so\_\_\_ out of \_\_\_ have helped someone during an emergency.

**Q6 Follow Up:** Did you feel comfortable or prepared helping someone during an emergency? Please elaborate

**Q7:** Why would you help, or why would you not help, someone having an emergency?

**Q8:** If you said that you have or would help during an emergency – how would you help?

**Q9:** What do you think could make you and other people more likely to help?

**Q10:** Would anyone like to tell me about any emergencies that you have witnessed or experienced in the past (emergency examples include breathing problems, chest pain, trauma, birth complications). Elaborate, if you can, on how the emergencies were managed. What was done well. And what was not done well.

**Q10 Elaboration / Follow-Up Probes:**  
☐☐What type of medical emergency was it?

- ☐ Was someone at the incident able to assist? Who? (Policeman, layperson?)
- ☐ If there was someone at the incident to assist, what did that person do to help?
- ☐ Did you/the casualty need transport to a health facility for emergency care?
- ☐ How long did you/the casualty wait for transport? What transport was available?
- ☐ How long did it take to reach the facility?
- ☐ Did you encounter any challenges when trying to obtain emergency care?

*Allow as many people volunteer to describe their medical emergency, and probe only with the above points if they have not already covered them. After each person's sharing make sure to thank them and acknowledge that their contribution is very valuable though it may be tragic or emotional.*

**Facilitator:** Thank you all for sharing your experiences so far. The types of emergencies you have mentioned include .... (list a summary of what they have shared burns, motor vehicle accidents.....)

## Section 2

**Q11:** Tell me about pre-hospital care (for instance ambulance, EMS, disaster preparedness) in Nigeria.

**Q12:** Tell me about the hospitals / health facilities in Nigeria

**Q13:** What are the barriers or challenges that you encounter when you are trying to access emergency care?

### **Q13 Elaboration / Follow-Up Probes:**

- ☐ Where do you seek care for a medical emergency?
- ☐ Do you encounter any significant delays when trying to receive care for a medical emergency? What are they?
- ☐ How available is emergency care at your facility?

**Q14:** What are the factors that make it easier for you to access emergency care?

**Q15:** Thinking back to your experiences, what factors have made it easier to access emergency care?

**Q16:** What changes could you recommend to improve access to emergency care?

**Q17:** If you had the choice, where would you choose to seek care for an emergency (for instance, in Nigeria or abroad? Private versus Federal hospitals?)

## Section 3

**Q18:** Is there anything else that anyone would like to add that we have not already discussed? Or that they would like to elaborate on from what we've previously discussed?

**Facilitator:** Thank you so much for coming and sharing your experiences, thoughts, and opinions with us. Some of the experiences you have described involved death and tragedy.

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You have provided us with valuable information that will be used to improve the emergency care system of Nigeria.

For peer review only

# Standards for Reporting Qualitative Research (SRQR)\*

<http://www.equator-network.org/reporting-guidelines/srqr/>

Page/line no(s).

## Title and abstract

<b>Title</b> - Concise description of the nature and topic of the study Identifying the study as qualitative or indicating the approach (e.g., ethnography, grounded theory) or data collection methods (e.g., interview, focus group) is recommended	1
<b>Abstract</b> - Summary of key elements of the study using the abstract format of the intended publication; typically includes background, purpose, methods, results, and conclusions	2 – 3

## Introduction

<b>Problem formulation</b> - Description and significance of the problem/phenomenon studied; review of relevant theory and empirical work; problem statement	4 – 5
<b>Purpose or research question</b> - Purpose of the study and specific objectives or questions	4 – 5

## Methods

<b>Qualitative approach and research paradigm</b> - Qualitative approach (e.g., ethnography, grounded theory, case study, phenomenology, narrative research) and guiding theory if appropriate; identifying the research paradigm (e.g., postpositivist, constructivist/ interpretivist) is also recommended; rationale**	6
<b>Researcher characteristics and reflexivity</b> - Researchers' characteristics that may influence the research, including personal attributes, qualifications/experience, relationship with participants, assumptions, and/or presuppositions; potential or actual interaction between researchers' characteristics and the research questions, approach, methods, results, and/or transferability	6
<b>Context</b> - Setting/site and salient contextual factors; rationale**	6
<b>Sampling strategy</b> - How and why research participants, documents, or events were selected; criteria for deciding when no further sampling was necessary (e.g., sampling saturation); rationale**	7
<b>Ethical issues pertaining to human subjects</b> - Documentation of approval by an appropriate ethics review board and participant consent, or explanation for lack thereof; other confidentiality and data security issues	9
<b>Data collection methods</b> - Types of data collected; details of data collection procedures including (as appropriate) start and stop dates of data collection and analysis, iterative process, triangulation of sources/methods, and modification of procedures in response to evolving study findings; rationale**	8

<b>Data collection instruments and technologies</b> - Description of instruments (e.g., interview guides, questionnaires) and devices (e.g., audio recorders) used for data collection; if/how the instrument(s) changed over the course of the study	8
<b>Units of study</b> - Number and relevant characteristics of participants, documents, or events included in the study; level of participation (could be reported in results)	7
<b>Data processing</b> - Methods for processing data prior to and during analysis, including transcription, data entry, data management and security, verification of data integrity, data coding, and anonymization/de-identification of excerpts	8
<b>Data analysis</b> - Process by which inferences, themes, etc., were identified and developed, including the researchers involved in data analysis; usually references a specific paradigm or approach; rationale**	9
<b>Techniques to enhance trustworthiness</b> - Techniques to enhance trustworthiness and credibility of data analysis (e.g., member checking, audit trail, triangulation); rationale**	9

## Results/findings

<b>Synthesis and interpretation</b> - Main findings (e.g., interpretations, inferences, and themes); might include development of a theory or model, or integration with prior research or theory	9 – 20
<b>Links to empirical data</b> - Evidence (e.g., quotes, field notes, text excerpts, photographs) to substantiate analytic findings	10 – 12

## Discussion

<b>Integration with prior work, implications, transferability, and contribution(s) to the field</b> - Short summary of main findings; explanation of how findings and conclusions connect to, support, elaborate on, or challenge conclusions of earlier scholarship; discussion of scope of application/generalizability; identification of unique contribution(s) to scholarship in a discipline or field	20 – 23
<b>Limitations</b> - Trustworthiness and limitations of findings	23

## Other

<b>Conflicts of interest</b> - Potential sources of influence or perceived influence on study conduct and conclusions; how these were managed	25
<b>Funding</b> - Sources of funding and other support; role of funders in data collection, interpretation, and reporting	24

\*The authors created the SRQR by searching the literature to identify guidelines, reporting standards, and critical appraisal criteria for qualitative research; reviewing the reference lists of retrieved sources; and contacting experts to gain feedback. The SRQR aims to improve the transparency of all aspects of qualitative research by providing clear standards for reporting qualitative research.

\*\*The rationale should briefly discuss the justification for choosing that theory, approach, method, or technique rather than other options available, the assumptions and limitations implicit in those choices, and how those choices influence study conclusions and transferability. As appropriate, the rationale for several items might be discussed together.

**Reference:**

O'Brien BC, Harris IB, Beckman TJ, Reed DA, Cook DA. **Standards for reporting qualitative research: a synthesis of recommendations.** *Academic Medicine*, Vol. 89, No. 9 / Sept 2014  
DOI: 10.1097/ACM.0000000000000388

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